

RIVERS AND HARBORS AND FLOOD  
CONTROL ACTS OF 1970

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REPORT  
OF THE  
COMMITTEE ON PUBLIC WORKS  
HOUSE OF REPRESENTATIVES

TO ACCOMPANY

H.R. 19877

A BILL AUTHORIZING THE CONSTRUCTION, REPAIR,  
AND PRESERVATION OF CERTAIN PUBLIC WORKS ON  
RIVERS AND HARBORS FOR NAVIGATION, FLOOD  
CONTROL, AND FOR OTHER PURPOSES



DECEMBER 3, 1970.—Committed to the Committee of the Whole House  
on the State of the Union and ordered to be printed

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## RIVERS AND HARBORS AND FLOOD CONTROL ACTS OF 1970

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DECEMBER 8, 1970.—Committed to the Committee of the Whole House on the  
State of the Union and ordered to be printed

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Mr. FALLON, from the Committee on Public Works,  
submitted the following

### REPORT

[To accompany H.R. 19877]

The Committee on Public Works, to whom was referred the bill (H.R. 19877) authorizing the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control, and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

The amendments are as follows:

Page 4, strike out lines 3 through 22 and insert in lieu thereof the following:

SEC. 102. The Secretary of the Army acting through the Chief of Engineers, is authorized and directed to make a survey subject to all applicable provisions of section 110 of the Rivers and Harbors Act of 1950 of the feasibility of constructing and maintaining a navigation channel having a depth of seventeen feet at mean low water and a width of one hundred feet, extending a distance of approximately two and one-half miles from deep water in Saint Georges Creek, Maryland, to the Harry Lundeberg School of Seamanship at Piney Point, Maryland, and terminating in a turning basin at that location.

Page 19, immediately following the period in line 2, insert the following:

Prior to the commencement of this project, including, but not limited to, acquisition of real property, the Secretary of the Army, acting through the Chief of Engineers, shall investigate all possible alternative methods, including, but not limited to, possible relocation of elements of the project, installation of channels, provision of levees and floodwalls, decreasing of size of project facilities, rerouting of streams, raising or lowering pools, and deepening channels and move-

ment on the stream, or any combination of the foregoing that can accomplish the purposes of this project and shall report his findings and determinations to the Congress.

Page 34, immediately after line 22, insert the following new sections:

SEC. 224. Section 204 of the Flood Control Act of 1950 is amended by adding at the end of the authorizations set forth under the center heading "Columbia River Basin" the following new paragraph:

"The Secretary of the Army, acting through the Chief of Engineers, is authorized to pay to those railroad employees suffering long term economic injury through reduction of income as the result of the relocation of rail transportation facilities due to the construction of Libby Dam, Montana, such sums as he determines equitable to compensate such employees for such injury. There is authorized to be appropriated to carry out this paragraph, not to exceed \$900,000."

SEC. 225. That the plan for flood protection in the Big Sandy River Basin, Kentucky, West Virginia, and Virginia included in the comprehensive plan for flood control in the Ohio River Basin, authorized by the Flood Control Act, approved June 22, 1936 (49 Stat. 1570), as amended and modified is hereby further modified to authorize the Secretary of the Army, acting through the Chief of Engineers, to provide the Towns of Williamson and Matewan, West Virginia, with comprehensive flood protection by a combination of local flood protection works and residential flood proofing and to initiate advanced engineering design and construction thereof as described by the Chief of Engineers in Report on Tug Fork, July 1970, at a total cost not to exceed \$10,000,000 except that no funds shall be appropriated to carry out this section until such modification is approved by the Appalachian Regional Commission and the President.

Page 34, line 23, strike out "224" and insert in lieu thereof "226".

#### PURPOSE OF THE BILL

H.R. 19877, as amended, is an omnibus river and harbor and flood control authorization bill similar to those which have been considered and passed in recent years. The last such omnibus bill was in 1968. Since enactment of the last omnibus bill, a number of reports have been submitted to Congress by the Corps of Engineers on navigation, beach erosion control, flood control, and related purposes. A total of 30 reports are included in the bill at a Federal cost of \$584,793,000. The projects are located in 21 States and Puerto Rico and cover all types of works under the jurisdiction of the committee and within the province of the Corps of Engineers. The bill also authorizes an increase in the amount of \$1.4 million in the monetary authorizations for one comprehensive river basin plan previously approved by Congress.

#### HEARINGS

The committee held 3 weeks of hearings on this bill. Complete testimony was received from the Corps of Engineers on the technical details of the projects, the estimated costs, and the economic justifications. The committee also heard testimony on a number of projects or items which it felt should be considered in connection with the bill.



Testimony was received from Members of Congress, Federal and State officials, representatives of local organizations, and from interested citizens.

#### SMALL PROJECTS

In addition to the projects in this bill, the Committee heard testimony with respect to report recommendations for a number of projects each having an estimated Federal cost of less than \$10,000,000. These projects qualify for authorization under the provisions of section 201 of the Flood Control Act of 1965 which permits the Congressional Committees on Public Works to approve projects under \$10,000,000 by resolution. This Committee presently has under active consideration a number of flood control, navigation and beach erosion projects which qualify for authorization under section 201.

#### ENVIRONMENTAL IMPACTS

Environmental statements for all projects in this bill have been filed with the Committee in accordance with the requirements of section 102 of the National Environmental Policy Act of 1969. The Committee notes that many of the project proposals impact on and impose changes on our natural and human environment, but considers such changes are inevitable if our nation is to continue to be responsive to the needs of present and future generations. The concern of this Committee is, therefore, that these needs be met by projects that not only minimize injurious environmental impacts, but also which contribute positively to an improved environment for the well-being of our people. The National Environmental Policy Act was approved January 1, 1970, and guidelines for making environmental statements were promulgated by the Council on Environmental Quality on April 30, 1970. In view of the short period of time which has elapsed since the promulgation of the guidelines and the requirements for extensive coordination, the environmental statements reflect a satisfactory degree of analysis based on available information, both with respect to alternative solutions and to the inclusion of measures to protect and improve the quality of the environment.

#### REPORT ON DEVELOPMENT OF WATER RESOURCES IN APPALACHIA

Section 206 of the Appalachian Regional Development Act of 1965 called upon the Secretary of the Army to prepare a comprehensive report for water resources development in Appalachia to be transmitted by the President with recommendations to the Congress by December 31, 1968. While this Committee had previously been advised that there would be a one-year delay in the completion of this report, almost two years have gone by and still there is no indication that the report will be available for consideration by Congress in the near future. The Committee is aware that the field level report was printed in December 1969 and that the proposed report of the Secretary of the Army was circulated for coordination with the States and Federal Departments in April of this year. The Committee recognizes that the report involves new policy and procedural matters which require careful consideration within the Administration, but considers that adequate time has been available to reach decisions. Great importance

is attached to this study and the Secretary of the Army is urged to process the report as required under the procedures established by section 206 of the Appalachian Act, so that Congress may give this matter early attention.

#### GRADUATE FELLOWSHIP PROGRAM IN WATER RESOURCES AND ENVIRONMENTAL LAW

The Graduate Fellowship Program in Water Resources and Environmental Law, sponsored by the Corps of Engineers in cooperation with the George Washington University, is now in its third year. In this program, qualified law school graduates and Corps attorneys earn their Masters degree in Water Resources and environmental law and are then assigned to field offices of the Corps to participate in project planning and development and all other civil functions activities of the Corps.

The Committee feels that this program is an extremely worthwhile contribution to both the program of the Corps and the water and related resources development generally. The Committee trusts that the program will be utilized to the fullest possible extent, and that its participants will be intimately involved in the policy and planning processes connected with the Civil Works program. The Corps of Engineers is to be congratulated for the foresight shown in the development of this program, which will help assure an interdisciplinary approach to water resources planning and development.

#### COMPILATIONS

Section 107 of the River and Harbor Act of 1962 authorized and directed the Secretary of the Army to prepare and transmit to Congress a compilation of survey and review reports on river and harbor and flood control improvements. The last report submitted pursuant to this section was in 1965. It is the Committee's desire that the compilation be brought up-to-date and kept current through regular supplemental submissions to the Congress.

In addition, the Committee requests that the compilation of laws relating to the improvement of rivers and harbors, which is currently up to date to October 22, 1966, also be brought up to date as soon as practicable.

#### CODIFICATION

Section 313 of the River and Harbor Act of 1965 directed the Secretary of the Army to transmit to the Committees on Public Works of the Senate and House of Representatives not later than June 30, 1968, a suggested draft of legislation revising and codifying the general and permanent laws relating to civil works projects of the Corps of Engineers. The required date of submission was extended to June 30, 1969, in section 109 of the River and Harbor Act of 1968, following a Department of the Army request for such an extension. The Department, in its letter submitting this legislative request, noted that the original date of submission of June 30, 1968, was impossible to meet because of delays in funding for the work, but assured the Congress that the codification and explanatory report would be submitted by June 30, 1969.

In spite of these assurances, the proposed codification has not yet

been received. The Committee feels that, because of the increasing complexity and variety of the laws affecting the civil works program of the Corps of Engineers, there is a great need for the proposed codification, and expects to receive it without further delay.

#### MONETARY SUMMARY OF PROJECTS AND LIST OF PROJECTS BY STATES

The following tables summarize the number of projects contained in the bill, together with the estimated Federal cost. The projects are itemized in detail in sections 101 and 201.

	Number	Amount
Title I:		
Navigation projects.....	10	\$184,501,000
Beach erosion control projects.....	1	240,000
Total, title I.....	11	184,741,000
Title II: Flood control and multiple purpose projects.....	19	400,052,000
Grand total.....	30	584,793,000

#### List of projects by States

Project	Estimated Federal cost
Alabama .....	None
Alaska .....	None
Arizona .....	None
Arkansas: Navigation: Ouachita and Black Rivers (also Louisiana) .....	\$13,500,000
California: Flood control:	
Goleta and vicinity, Atascadero Creek .....	13,830,000
Merced County Streams .....	37,260,000
Cottonwood Creek (channel improvement and two reservoirs) .....	40,000,000
Total, California .....	91,090,000
Colorado .....	None
Connecticut .....	None
Delaware .....	None
Florida:	
Navigation:	
Port Sutton, Tampa Harbor .....	Maintenance
Tampa Harbor .....	40,000,000
Beach erosion control: Lido Key .....	240,000
Total, Florida .....	40,240,000
Georgia .....	None
Hawaii .....	None
Idaho .....	None
Illinois .....	None
Indiana .....	None
Iowa: Flood control: Mississippi River at Davenport (local protection and reservoir) .....	12,263,000
Kansas: Flood control:	
Blue River, vicinity of Kansas City (channel improvement and four reservoirs). (See Missouri.)	
Arkansas-Red River Basin, water quality control. (See Oklahoma.)	
Total, Kansas .....	None

<i>Project</i>	<i>Estimated Federal Cost</i>
Kentucky -----	None
Louisiana: -----	None
Navigation: Ouachita and Black Rivers. (See Arkansas.)	
Flood control:	
Eastern Rapides and South-Central Avoyelles Parishes --	(15,333,000)
Sabine River Basin (local protection, 3 reservoirs, and navigation channel). (See Texas.)	
Total, Louisiana -----	(15,333,000)
Maine -----	None
Maryland: Navigation: Baltimore Harbor (also Virginia) -----	40,000,000
Massachusetts: Navigation: Pleasant Bay -----	10,221,000
Michigan: Flood Control: Red Run Drain and Lower Clinton River (channel improvement) -----	40,000,000
Minnesota: Flood control: Wild Rice River, Twin Valley Reservoir -----	8,359,000
Mississippi -----	None
Missouri: Flood control: Blue River, vicinity of Kansas City (channel improvement and 4 reservoirs) (also Kansas) -----	40,000,000
Montana -----	None
Nebraska: Navigation: Missouri River (also North Dakota and South Dakota) -----	35,981,000
Nevada -----	None
New Hampshire -----	None
New Jersey -----	None
New Mexico -----	None
New York: Flood control: Ellicott Creek, Sandridge Reservoir -----	19,070,000
North Carolina: Navigation:	
Manteo (Shallowbag) Bay -----	10,769,000
Atlantic Intracoastal Waterway Bridges (also Virginia) -----	11,220,000
Total, North Carolina -----	21,989,000
North Dakota:	
Navigation: Missouri River. (See Nebraska.)	
Flood control:	
Missouri River, Oahe Reservoir -----	732,000
Shenenne River, Kindred Reservoir -----	20,000,000
Souris River, Burlington Reservoir -----	29,240,000
Total, North Dakota -----	49,972,000
Ohio: Flood control: Mill Creek (channel improvement) -----	32,642,000
Oklahoma: Flood control:	
Deep Fork River, Arcadia Reservoir -----	24,900,000
Arkansas-Red River Basin, water quality control (also Texas and Kansas)	
Oregon: Navigation: Coos Bay -----	9,100,000
Pennsylvania -----	None
Rhode Island -----	None
South Carolina -----	None
South Dakota: Navigation: Missouri River (See Nebraska.) -----	None
Tennessee -----	None
Texas:	
Navigation: Freeport Harbor -----	13,710,000
Flood control:	
Arkansas-Red River Basin, water quality control. (See Oklahoma.)	
Sabine River Basin (channel improvement, three reservoirs, and navigation channel) (also Louisiana) -----	40,000,000
Total, Texas -----	53,710,000
Utah -----	None
Vermont -----	None



Project	Estimated Federal Cost
Virginia: Navigation:	
Baltimore Harbor. (See Maryland.)	
Atlantic Intracoastal Waterway Bridges. (See North Carolina.)	
Total, Virginia -----	None
Washington -----	None
West Virginia -----	None
Wisconsin -----	None
Wyoming -----	None
Puerto Rico: Flood control:	
Portugues River, Portugues Reservoir -----	11, 110, 000
Cerrillos River, Cerrillos Reservoir -----	16, 351, 000
Ponce, channel improvements -----	14, 295, 000
Total, Puerto Rico -----	41, 756, 000
Grand total -----	584, 793, 000

## ANALYSIS OF TITLE I

### SECTION 101

This section summarizes the project authorization for navigation and beach erosion control works in Title I. The initial table lists the projects, project document numbers, and estimated Federal costs. Pertinent information follows for each project.

TITLE I.—RIVERS AND HARBORS NAVIGATION PROJECTS

Project	H. Doc. No.	Federal cost of new work
Pleasant Bay, Mass. -----	91-	\$10, 221, 000
Baltimore Harbor, Md. and Va. -----	91-	40, 000, 000
Atlantic Intracoastal Waterway bridges, North Carolina -----	91-	11, 220, 000
Manteo (Shallowbag) Bay, N.C. -----	91-303	10, 769, 000
Port Sutton, Fla. -----	91-150	
Tampa Harbor, Fla. -----	91-401	40, 000, 000
Freeport Harbor, Tex. -----	91-	13, 710, 000
Ouachita-Black Rivers naval project, Arkansas and Louisiana -----	91-	13, 500, 000
Missouri River, N. Dak., S. Dak., and Nebr. -----	91-	35, 981, 000
Coos Bay, Oreg. -----	91-151	9, 100, 000
		184, 501, 000
Beach erosion: Lido Key, Fla. -----	91-320	240, 000
Total of title I. -----		184, 741, 000

### PLEASANT BAY, MASS.

(H. Doc. 91- )

*Location.*—At the southeastern extremity of Cape Cod, about 75 miles southeast of Boston, Massachusetts.

*Authority.*—Section 109 of the River and Harbor Act approved 14 July 1960.

*Existing project.*—A Federal navigation channel extends from Nantucket Sound to Chatham, adjacent to the study area. Non-Federal projects include channels and anchorage areas in Pleasant Bay and a dike between Morris Island and the mainland.

*Navigation problem.*—Extremely hazardous navigation conditions exist due to reduced depths which resulted from an offshore bar which formed after storms breached Monomoy Island. Littoral drift and

blown or washed-over sand cover valuable shellfish beds and restrict recreational boating.

*Recommended plan of improvement.*—Provides for a stabilized inlet through Nauset Beach, 1,000 feet wide with 2 jetties and provision for sand by-passing; a channel between the jetties into Chatham Harbor, 20 feet deep and 200 feet wide; closing the existing Chatham Harbor Inlet with a sand dike and provision of a fence barrier south of the closure; an inlet channel from Nantucket Sound to Chatham Harbor, 6 feet deep and 200 feet wide; branch channels from the inlet, 200 to 60 feet wide, throughout the bay and into Aunt Lydia's, Ryder's and Round Coves, and Meetinghouse, Kescayo-Gansett, Arey's, Paw Wah, Quanset, and Crows Ponds, all 6 feet deep, and a jetty at Round Cove; 5-acre and 4-acre anchorage areas 6 feet deep in Aunt Lydia's Cove; and dune rebuilding of Nauset Beach.

*Estimated cost (price level of May 1968)*

Federal .....	<sup>1</sup> \$14, 157, 000
Non-Federal .....	743, 000
<b>Total .....</b>	<b>14, 900, 000</b>

<sup>1</sup> Excludes \$126,000 for navigation aids.

PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
<b>Annual charges:</b>			
Interest and amortization .....	\$571, 200	\$268, 000	\$839, 200
Maintenance and operation .....	7, 300	544, 000	551, 300
<b>Total .....</b>	<b>578, 500</b>	<b>812, 000</b>	<b>1, 390, 500</b>
<b>Annual benefits:</b>			
Commercial fishing .....			629, 100
Recreational boating .....			939, 800
Emergency protection .....			10, 000
Surf fishing .....			4, 000
<b>Total .....</b>			<b>1, 582, 900</b>

*Benefit-cost ratio.*—1.1 (interest rate of 5½%).

*Local cooperation.*—Provide a cash contribution equal to five percent of construction cost, estimated at \$743,000; maintain the project including dredging at an estimated annual cost of \$544,000, construct and maintain new marinas open to all on equal terms; provide and maintain without cost to the United States necessary mooring facilities and utilities including a public landing with suitable supply facilities open to all on equal terms in Meetinghouse, Kescayo-Gansett, Arey's, Paw Wah, Quanset, and Crows Ponds, and in Round, Ryder's and Aunt Lydia's Coves; provide without cost to the United States all lands, easements, and rights-of-way for construction and maintenance of the project and for aids to navigation, including suitable areas for initial and subsequent disposal of spoil, and also necessary retaining dikes, bulkheads, and embankments therefor; establish a public body empowered to regulate the use, growth, and free development of harbor facilities; hold and save the United States free from damages due to construction and subsequent maintenance; and establish regulations prohibiting discharge of pollutants in the waters of the bay. Local interests have indicated their willingness to furnish all

items of local cooperation required as stated in the report of the Board of Engineers for Rivers and Harbors.

*Comments of the Commonwealth and Federal agencies.—*

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

Commonwealth of Massachusetts: Favorable.

*Remarks.*—The recommended improvements would reduce the hazard to navigation and permit the use of the area by the ever-increasing small boat traffic. The Committee considers maintenance of the general navigation facilities to be a Federal responsibility in accordance with established policies and procedures. On this basis, the estimated Federal cost is \$10,221,000.

BALTIMORE HARBOR AND CHANNELS, MARYLAND AND VIRGINIA

(H. Doc. 91- )

*Location.*—The Baltimore Channels, with an aggregate length of 36.6 miles improved for navigation, extend from the mouth of Chesapeake Bay northward for 172 miles to a point 10 miles upstream of the Patapsco River mouth. Baltimore Harbor is located on both banks of the Patapsco River.

*Authority.*—House Public Works Committee Resolution adopted 16 July 1958.

*Existing project.*—In lower Chesapeake Bay, the Cape Henry Channel 1,000 feet wide and 1.0 mile long, the York Spit Channel 1,000 feet wide and 10.4 miles long; and the Rappahannock Shoal Channel 800 feet wide and 5.3 miles long; all 42 feet deep. In upper Chesapeake Bay and Baltimore Harbor, a 19.9 mile main channel 1,750 to 800 feet wide and 42 feet deep and three branch channels 42 feet and 35 feet deep, and 650 and 600 feet wide, plus smaller channels, and eight anchorages 19 to 35 feet deep.

*Navigation problem.*—Depths are not adequate for fully-loaded large bulk cargo carriers now in use.

*Recommended plan of improvement.*—Provides for Cape Henry, York Spit, and Rappahannock Shoal Channels 50 feet deep and 1,000 feet wide; Main Ship Channel 50 feet deep and 800 feet wide, three branch channels, 50, 49 and 40 feet deep and all 600 feet wide.

*Estimated cost (price level of January 1969)*

Federal .....	\$99,500,000
Non-Federal .....	3,900,000
Total .....	103,400,000

<sup>1</sup> Excludes \$87,000 for aids to navigation.

PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$6,093,700	\$217,500	\$6,311,200
Maintenance and operation .....	346,400		346,400
Total .....	6,440,100	217,500	6,657,600

*Annual benefits.*—Transportation savings: \$12,242,000.

*Benefit-cost ratio.*—1.8.

*Local cooperation.*—Provide without cost all lands, easements, and rights-of-way for construction and maintenance of the project and for aids to navigation, including spoil disposal areas, retaining dikes, bulkheads and embankments or the costs of such retaining works; hold and save the United States free from damages that may result from construction and maintenance of the project; provide and maintain adequate public terminal and transfer facilities open to all on equal terms; provide and maintain depths in berthing areas and local access channels commensurate with those provided in the related project areas; and accomplish without cost to the United States such alterations as required in sewer, water supply, drainage, and other utility facilities. Local interests have indicated to the District Engineer their willingness to furnish all items of local cooperation required.

*Comments of the States and Federal agencies.*—

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of Maryland: Favorable.

Commonwealth of Virginia: Favorable.

*Remarks.*—This improvement will permit the use of the larger vessels that are presently in operation and those that are projected for the future. The Committee does not wish to encourage Government competition with private industry. Therefore, on the authorized project no dredging work shall be performed by hopper dredges or Corps-owned dredges unless fair and reasonable prices can not be obtained from contractors within the 25 percent limitation of 33 U.S.C. 624.

#### ATLANTIC INTRACOASTAL WATERWAY BRIDGES, NORTH CAROLINA

(H. Doc. 91- )

*Location.*—In eastern North Carolina in the vicinity of Pamlico Sound, at Coinjock, Fairfield, Wilkerson Creek, Hobucken, and Core Creek.

*Authority.*—Senate and House Public Works Committee resolutions adopted 30 September 1968 and 11 December 1969, respectively.

*Existing project.*—The Atlantic Intracoastal Waterway is a sea-level navigation route through the sounds and marine marshes generally paralleling the Atlantic coast between Norfolk, Virginia, and the St. Johns River in Florida. The North Carolina portion of this waterway is about 308 miles long, extending from the Virginia-North Carolina line to the North Carolina-South Carolina line near Little River, South Carolina. Vehicular traffic across the North Carolina section of the Atlantic Intracoastal Waterway is served by 21 bridges of various types, including one bridge now under construction. This report concerns five Federally owned swing-span bridges operated and maintained by the Wilmington District, Corps of Engineers.

*Bridge problem.*—The five existing structures are grossly inadequate from the standpoint of clear roadway widths and design loading, and four have restricted vertical clearances. These substandard features, together with the poor physical condition of four of the



bridges, present potential and growing traffic hazards. School buses often scrape the bridge sides when passing commercial and log trucks. Such trucks often carry loads in excess of the safe-carrying capacity of the bridges. These conditions, together with the increasing cost of operation and maintenance, indicate an urgent need for the immediate replacement of four of the bridges and the subsequent replacement of the Coinjock Bridge. While the Coinjock Bridge is in better condition structurally than the other four bridges, it is a traffic hazard because of its narrow width and limited traffic-carrying capacity. Traffic conditions at each of the existing bridges are sufficiently hazardous to constitute a serious public menace.

*Recommended plan of improvement.*—It is in the best interests of the United States, the State of North Carolina, the highway users, and the waterway users to replace the existing bridges at Wilkerson Creek, Hobucken, Core Creek, Fairfield, and Coinjock with two-lane fixed bridges having a 65-foot vertical clearance. On the basis of current physical condition, bridge widths, and average daily traffic count, a replacement program is proposed, with a priority scheduling immediate replacement of the Wilkerson Creek Bridge and the subsequent replacement of the Hobucken, Core Creek, Fairfield, and Coinjock Bridges in that order.

*Estimated cost (1969 price level)*

Federal .....	\$11, 220, 000
Non-Federal .....	3, 740, 000
Total .....	14, 960, 000

*Project economics.*—The selection of the fixed-span bridges to replace the existing structures was based on estimates of annual economic costs of three different types of bridges. The annual costs were determined as the sum of (a) interest and amortization of costs of new construction, (b) amortization of remaining investment in existing structures, (c) operation and maintenance costs, (d) major replacement costs, and (e) highway-user costs. Based on  $5\frac{1}{8}$  percent interest, the total annual cost for the five fixed, 65-foot clearance bridges is \$905,000. Annual operation and maintenance costs are estimated at \$4,000 for each bridge, making a total of \$20,000 annually for the five structures. The State of North Carolina, in the interest of replacing the existing substandard swing bridges with fixed-span structures, has offered to contribute 25 percent of the first cost of replacement of the existing bridges and, upon completion, to accept ownership and maintenance responsibilities for the fixed-span bridges. This contribution by the State of North Carolina would reduce the total Federal cost for the bridge replacement program from \$14,960,000 to \$11,220,000, and would eliminate all future Federal operation and maintenance costs and ownership responsibilities.

*Local cooperation.*—The State of North Carolina has agreed to contribute 25 percent of the actual first cost of the replacement bridges either in a lump sum prior to construction or in installments prior to the start of pertinent work items in accordance with construction schedules as required by the Chief of Engineers, the final apportionment of costs to be made after the actual costs have been determined; and that, upon completion of each bridge, the State accept mainte-

nance, replacement, and ownership responsibilities thereof; the bridges to remain toll free. Furthermore, ownership of each replacement bridge should be transferred to the State of North Carolina upon completion.

*Comments of the State and Federal agencies.—*

Department of the Interior: Favorable.

Department of Transportation: Favorable.

State of North Carolina: Favorable.

*Remarks.*—The recommended replacement of the 5 Federally owned bridges is urgently needed because the existing structures are in poor physical condition and are sufficiently hazardous to constitute a serious public menace. The new bridges will be owned, operated, and maintained by the State of North Carolina.

MANTEO (SHALLOWBAG) BAY, N.C.

(H. Doc. 303, 91st Cong.)

*Location.*—On the coast of North Carolina about 85 miles south of Cape Henry and 45 miles north of Cape Hatteras.

*Authority.*—Senate Public Works Committee and House Public Works Committee resolutions adopted 17 April 1963 and 26 September 1963, respectively.

*Existing project.*—The Federal project provides for navigation channels, 14 feet deep and 400 feet wide across the ocean bar and through Oregon Inlet; channel 12 feet deep and 100 feet wide extending 8 miles from Oregon Inlet via Old House Channel to the 12-foot depth in Pamlico Sound; channel 12 feet deep and 100 feet wide from Old House Channel to and through Roanoke Sound 12.6 miles to a turning basin at Manteo (Shallowbag) Bay, 12 feet deep and 200 feet wide, and 600 feet long, including a side channel 12 feet deep and 100 feet wide extending 0.8 mile to a basin 12 feet deep, 180 feet wide from Manteo (Shallowbag) Bay for about 1.6 miles to that depth in Albemarle Sound.

*Navigation problem.*—Deeper channels are needed to accommodate the fishing vessels and commercial traffic. Channel protection at Oregon Inlet is needed to prevent shoaling.

*Recommended plan of improvement.*—Provides for stabilization of Oregon Inlet with dual jetties, including sand transfer facilities and protection for the highway bridge over Oregon Inlet; a channel 20 feet deep and 400 feet wide through the ocean bar at Oregon Inlet; a channel 14 feet deep and 120 feet wide from the gorge in Oregon Inlet to and through Roanoke Sound to and including a 15-acre basin of the same depth at Wanchese; and a channel 10 feet deep and 100 feet wide from the channel in Manteo (Shallowbag) Bay through Roanoke Sound to and through Albemarle Sound to deep water near the northern end of Croatan Sound.

<i>Estimated cost (January 1968 price level)</i>	
Federal	----- <sup>1</sup> \$10, 769,000
Non-Federal	----- 408, 000
Total	----- 11, 177, 000

<sup>1</sup> Excludes \$19,000 for navigation aids.

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$601,400	\$22,800	\$624,200
Maintenance .....	262,600	300	262,900
Total .....	864,000	23,100	887,100
<i>Annual benefits</i>			
Commercial fishing .....			\$922,800
Transportation savings .....			45,200
Total .....			968,000

*Benefit-cost ratio.—1.1.*

*Local cooperation.*—Provide without cost to the United States all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project and for aids to navigation upon the request of the Chief of Engineers, including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and subsequent disposal of spoil, and also necessary retaining dikes, bulkheads and embankments therefore or the cost of such retaining works; hold and save the United States free from damages due to the construction works and subsequent maintenance of the project; provide and maintain, at local expense, adequate public terminal and transfer facilities, and necessary mooring and berthing facilities in an enlarged basin, open to all on equal terms; provide and maintain without cost to the United States, depths in berthing areas and local access channels serving the terminals commensurate with depths provided in the related project areas; provide and maintain without cost to the United States, bottom protection through the bridge over Oregon Inlet, or the cost of such protective works; accomplish, without cost to the United States, such alterations as required in sewer, water supply, drainage, power lines, telephone lines, or other utility facilities, as well as their maintenance; establish a competent and properly constituted public body empowered to regulate the use, growth, and development of the harbor facilities, with the understanding that said facilities will be open to all on equal terms; and establish regulations prohibiting discharge of pollutants into the waters of the channels and basin by users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State, and local authorities responsible for pollution prevention and control. Local interests have indicated willingness to provide requirements of local cooperation.

*Comments of the State and Federal agencies.—*

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of North Carolina: Favorable.

*Comments of the Bureau of the Budget.*—No objection; however, it notes that the benefits are largely based on future development and would expect a review of the economic justification prior to construction.

*Comments of the Secretary of the Army.*—The Secretary of the Army states a review of the economic justification of the project will be made prior to any request for funds to initiate construction.

*Remarks.*—The recommended project will provide for a stabilized Oregon Inlet channel and will accommodate the fishing vessels and commercial traffic.

# PORT SUTTON, TAMPA HARBOR, FLA.

(H. Doc. 150, 91st Cong.)

*Location.*—Port Sutton is located in Tampa Bay, about four miles southeast of Tampa and 33 miles from the Gulf of Mexico.

*Authority.*—Senate Public Works Committee Resolution adopted 4 May 1962 and House Public Works Committee Resolution adopted 23 June 1964.

*Existing project.*—Port Sutton Channel is a 3,000-foot spur of the main ship channel, Hillsborough Channel. The authorized Federal Port Sutton project provides for 30-foot channel and basin depths and 150-foot channel width. Local interests have improved the channel and basin to a 34-foot depth and increased channel width to 280 feet.

<i>Estimated cost (September 1966 price level)</i>	
Federal .....	( <sup>1</sup> )
Non-Federal .....	\$2,000
Total .....	2,000

<sup>1</sup> Federal cost of \$7,000 for navigation aids.

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$400	\$100	\$500
Maintenance .....	9,400		9,400
Total .....	9,800	100	9,900

*Annual benefits.*—Transportation savings: \$44,500.

*Benefit-cost ratio.*—4.5.

*Local cooperation.*—Provide without cost to the United States all lands, easements, and rights-of-way required for maintenance of the project and for aids to navigation upon the request of the Chief of Engineers, including suitable areas determined by the Chief of Engineers to be required in the general public interest for disposal of spoil, and also necessary retaining dikes, bulkheads and embankments therefor or the costs of such retaining works; hold and save the United States free from damages due to the maintenance dredging; provide and maintain at local expense adequate public terminal and transfer facilities open to all on equal terms; provide and maintain without cost to the United States depths in berthing areas and local access channels serving the terminals commensurate with the depth provided in the related project areas; and establish regulations prohibiting discharge of pollutants in the waters of the channel and harbor by users thereof, which regulations shall be in accordance with applicable laws



or regulations of Federal, State, and local authorities responsible for pollution prevention and control. Local interests have indicated their willingness to furnish all items of local cooperation required.

*Comments of the State and Federal agencies.—*

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of Florida: Favorable.

*Comments of the Bureau of the Budget.—*No objection.

*Remarks.—*Maintenance of the existing locally provided 34-foot depth of the Port Sutton Channel is needed since the use of larger more economical vessels precludes a lesser depth.

TAMPA HARBOR, FLA.

(H. Doc. 401, 91st Cong.)

*Location.—*Tampa Harbor is in Tampa Bay. Tampa Bay is located about midway along the west coast of Florida. The gulf entrance is about 330 miles southeast of Pensacola and 220 miles north of Key West.

*Authority.—*Senate Public Works Committee resolutions adopted 18 January 1957 and 4 May 1962; and House Public Works Committee resolutions adopted 9 April 1957, 19 June 1963, and 23 June 1964.

*Existing project.—*The existing project provides for an ocean bar (Egmont) channel 36 feet deep and 600 feet wide; lower bay channel (Mullet Key) 34 feet deep and 500 feet wide; thence channels 34 feet deep and 400 feet wide through Tampa and Hillsborough Bays and in Sparkman, Port Tampa, and Ybor Channels; other channels of lesser dimensions and turning basins. Total length of existing project is about 67 miles.

*Navigation problem.—*Channels in Tampa Harbor are inadequate for the needs of deep draft traffic for such commodities as phosphate rock, petroleum, and sulphur. Also, the expanding commerce at Tampa and modernization of terminal handling in the harbor has brought about a shift in certain bulk handling operations to the East Bay area, which will require deep ship channels to serve the newer terminals.

*Recommended plan of improvement.—*A channel 46 feet deep and 700 feet wide across Egmont Bar; channels 44 feet deep and in widths varying from 600 feet to 500 feet in main channels; a channel 42 feet deep and 400 feet wide in Hillsborough Cut "D" and Sparkman Channel; a channel 42 feet deep and 400 feet wide in Port Tampa Channel; a channel 40 feet deep and 300 feet wide in Ybor Channel; and turning basins of similar depths and maintenance of the Port Sutton Terminal Channel provided it is improved to 44 feet deep and 200 feet wide by local interests.

*Estimated cost (July 1969 price level)*

Federal	----- <sup>1</sup> \$101, 060, 000
Non-Federal	-----880, 000
Total	-----101, 940, 000

<sup>1</sup> Excludes \$860,000 for navigation aids.

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
<b>Annual charges:</b>			
Interest and amortization.....	\$6,709,000	\$49,000	\$6,758,000
Maintenance and operation.....	240,000	2,000	240,000
Economic loss of lands.....			2,000
Total.....	6,949,000	51,000	7,000,000
<b>Annual benefits:</b>			
Commercial navigation.....			13,693,000
Land enhancement.....			177,000
Total.....			13,870,000

*Local cooperation.*—Provide without cost to the United States all lands, easements, and rights-of-way required for construction and subsequent maintenance of the project and for aids to navigation upon the request of the Chief of Engineers, including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and subsequent disposal of spoil and necessary retaining dikes, bulkheads, and embankments therefor, or the costs of such retaining works; hold and save the United States free from damages due to construction and maintenance of the project; provide and maintain at local expense adequate public terminal and transfer facilities open to all on equal terms, and depths in berthing areas and local access channels serving terminals commensurate with the depth provided in the related project areas; accomplish without cost to the United States such utility and other relocations or alterations as necessary for the project purposes; prohibit erection of any structure within 125 feet of project channels or turning basins; establish regulations prohibiting discharge of pollutants into the waters of the channel and harbor by users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State, and local authorities responsible for pollution prevention and control; contribute in cash 0.6 percent of the construction cost, including engineering and design and supervision and administration of all work to be provided by the Corps of Engineers, a contribution now estimated at \$600,000, to be paid in a lump sum prior to start of construction or in installments prior to start of pertinent work items in accordance with construction schedules as required by the Chief of Engineers, the final apportionment of cost to be made after the actual costs have been determined; and provide a channel 44 feet deep, 200 feet wide, and 4,000 feet long into Port Sutton terminal channel to standards suitable to the Chief of Engineers for Federal maintenance. Local interests have indicated willingness to comply with requirements of local cooperation.

*Comments of the State and Federal agencies.*—

Department of Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Commerce: Favorable.

Department of Transportation: Favorable.

State of Florida: Favorable.

*Comments of the Office of Management and Budget.*—The Office of Management and Budget notes that some consideration was given

to the possible alternative of off-shore transfer facilities. It notes further that vessel sizes are projected to increase markedly in the future. The Office states that because of the costs involved in deepening this harbor to depths required to handle projected vessel traffic it recommends that, should the project be authorized, an economic analysis be done during advanced engineering and design and reviewed by the Office of Management and Budget concerning the economic feasibility of off-shore transfer facilities or shore facilities near the mouth of Tampa Bay in lieu of channel deepening.

The Office of Management and Budget further notes that the recommended project includes 5 feet of additional depth for "safety and ease of navigation." It states that it has no basis to object to such clearance, noting that 3 feet is presently provided for the existing channel depths with minimal reporting of vessel damage. The Office states that it understands that the 5 feet clearance is mainly a value judgment based on minimum engineering and economic analyses and notes that it is estimated that the additional 2 feet will increase the project cost by \$30M. The Office states that the Corps of Engineers should determine more accurately the necessary requirements for navigation clearances before funds of this magnitude are expended.

*Comments of the Secretary of the Army.*—He states that the recommendation of the Office of Management and Budget concerning the accomplishment of an economic analysis during advanced engineering and design and reviewed by the Budget for the economic feasibility of off-shore transfer facilities or shore facilities near the mouth of Tampa Bay in lieu of channel deepening; will be done. He further states regarding the comment of the Budget that the Corps should determine more accurately the necessary requirements for navigation clearances, that the Corps of Engineers is presently making studies of depths that are needed as a safety factor for the larger vessels that are presently in use and that are projected for use in the future. He further states that this information will be used for determining the clearance needed in this project prior to construction.

*Remarks.*—This project is needed to provide adequate channels for deep-draft phosphate, petroleum, and sulphur traffic and to meet the requirements of the expanding commerce at Tampa and modernization of terminal handling facilities. Federal maintenance of the Port Sutton Terminal Channel and the East Bay Channel and Turning Basin is required upon enactment of this Act.

#### FREEPORT HARBOR, TEX.

(H. Doc. 91 - )

*Location.*—Freeport Harbor is located on the central Gulf Coast of Texas about 50 miles southwest of Galveston, Texas.

*Authority.*—House of Representatives Public Works Committee resolution adopted 19 May 1960.

*Existing project.*—The existing project provides for a 7-mile long channel extending from the Gulf of Mexico, through a jettied entrance, to the city of Freeport. The latest improvements provide for an entrance channel with a depth of 38 feet, for inside channels and turning basins with a depth of 36 feet, and for Federal assumption of respon-

sibility for maintenance of a 30 x 200 feet branch channel and 30 x 550 x 600 foot turning basin constructed by local interests.

*Navigation problem.*—Widths, depths, and alignments of the existing channels and turning basins at Freeport Harbor are not adequate for safe maneuvering and turning of the existing and prospective traffic of supertankers and large general cargo vessels.

*Recommended plan of improvement.*—Realignment and enlargement of the existing main channel and turning basins to a project depth of 45 feet; construction of a new upper turning basin with a diameter of 1,200 feet and depth of 45 feet; deepening Brazos Harbor Channel from 30 feet to 36 feet; enlargement of the Brazos Harbor turning basin to a diameter of 750 feet and depth of 36 feet; relocation of the North Jetty; and public use facilities adjacent to the harbor jetties.

*Estimated cost (price level of April 1970)*

Federal .....	\$13,710,000
Non-Federal .....	2,395,000
Total .....	16,105,000

PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$849,100	\$146,200	\$995,300
Maintenance .....	206,600	26,300	232,900
Total .....	1,055,700	172,500	1,228,200
Annual benefits:			
Transportation savings .....			2,054,000
Reduction in navigation hazards .....			17,000
Reduction in maintenance dredging .....			68,000
Total .....			2,139,000

*Benefit-cost ratio.*—1.7.

*Local cooperation.*—Provide all lands, easements, and rights-of-way including suitable areas for initial and subsequent disposal of spoil and necessary retaining works therefor or the cost of such retaining works; hold and save; accomplish all alterations; provide and maintain depths in berthing areas and local access channels commensurate with project depths; and establish regulations prohibiting discharge of pollutants into the waters of the improved channels by users thereof in accordance with applicable laws or regulations of Federal, State, and local authorities responsible for pollution prevention and control. Local interests have indicated their willingness to meet the requirements of local cooperation.

*Comments of State and Federal agencies.*—

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of Texas: Favorable.

*Remarks.*—The project will provide adequate widths and depths to accommodate the safe and efficient movement of large supertankers and bulk carriers currently in use and expected to use the harbor in the future.



# OUACHITA AND BLACK RIVERS NAVIGATION PROJECT, ARKANSAS AND LOUISIANA

(H. Doc. 91- )

*Location.*—The Ouachita River rises in Polk County in western Arkansas and flows southeasterly to Jonesville, Louisiana, where it joins with Tensas and Little Rivers to form Black River which flows southerly through Louisiana to join the Red River.

*Authority.*—Section 110 of the River and Harbor Act of 13 August 1968.

*Existing project.*—The authorized project provides for a channel with a minimum depth of 9 feet and minimum bottom width of 100 feet from the mouth of Black River to Camden, Arkansas, a distance of 351 miles, by construction of the Johnsville, Columbia, Felsenthal, and Calion Locks and Dams. Columbia Lock and Dam is complete and Jonesville Lock and Dam is under construction.

*Navigation problem.*—Construction of the Felsenthal and Calion units in Arkansas has not been initiated because local interests have not provided the necessary lands as specified by the Flood Control Act of 1960.

*Recommended project modification.*—In accordance with the recommendation of the Bureau of Sport Fisheries and Wildlife of the Department of the Interior concerning establishment of national wildlife refuges, the Chief of Engineers recommends modification of the project authorized in 1960 to provide for Federal acquisition of 65,000 acres of land at the Felsenthal Lock and Dam and 14,700 acres at Columbia Lock and Dam for establishment of national wildlife refuges under Public Law 85-624 and Section 6(e) of Public Law 89-72. Also, that the requirements of local cooperation for the project remain as authorized in the River and Harbor Act of 1960, with the exception that the cost of lands for the national wildlife refuge at the Felsenthal Lock and Dam would be borne by the Federal Government.

ESTIMATED COST—FELSENTHAL UNIT (PRICE LEVEL OF JULY 1969)

	Approved plan	Amount of increase	With national wildlife refuge
Federal.....	23,285,000	10,500,000	33,785,000
Non-Federal.....	4,140,000	-3,795,000	345,000
Total.....	27,425,000	6,705,000	34,130,000
Columbia unit: Increased cost for wildlife refuge.....			3,000,000
Total increase in Federal cost due to wildlife refuges.....			13,500,000

*Project justification.*—The Bureau of Sport Fisheries and Wildlife of the Department of the Interior completed studies concerning the value of additional lands in the Ouachita River basin as national waterfowl refuges. These studies showed that additional acreage in public ownership in the Mississippi Flyway is needed to meet the Federal responsibility for perpetuating the waterfowl resource. The Bureau found that the Felsenthal and the Columbia areas have significant value in carrying out the National Migratory Bird Manage-

ment Program. Therefore, the Bureau recommended that approximately 65,000 acres of land and water area at Felsenthal Lock and Dam and about 14,700 acres at the Columbia Lock and Dam be acquired in fee title to be made available for management as a part of the National Wildlife Refuge System. The Bureau states that acquisition of lands for refuges at these locations would contribute to the national goals for conservation of migratory waterfowl by providing important migration and wintering habitat. The Bureau believes a significant acreage of hardwood forest lands of value to migratory birds and resident wildlife species should be preserved in an area where extensive clearing activities threaten to eliminate an important ecological type. The clearing of such forest lands would cause the loss of nationally significant fish and wildlife values. The proposed refuges would be managed to provide a wide range of benefits of both a recreational and economic nature. The Bureau indicates that the proposal would provide substantial benefit to the Nation, including preservation of a habitat type that is rapidly decreasing in quantity. In addition, many species of animals now on the rare and endangered list are often associated with the type of land in the area.

*Comments of State and Federal agencies.—*

Department of the Interior: Favorable.

State of Arkansas: Favorable.

State of Louisiana: Favorable.

*Remarks.*—The proposed project modification would provide for the acquisition of 65,000 acres of land at the Felsenthal Lock and Dam and about 14,700 acres of land at the Columbia Lock and Dam for establishment of national wildlife refuges. Acquisition of lands for refuges at these locations would contribute to the national goals for conservation of migratory waterfowl by providing important migration and wintering habitat.

MISSOURI RIVER, N. DAK., S. DAK., AND NEBR.

(H. Doc. 91- )

*Location.*—The reach of the Missouri River considered is about 853 miles long in the Northern Great Plains region. The river valley is entrenched 200 feet to 700 feet below the adjacent uplands. From the Montana-North Dakota state line to Gavins Point Dam, a distance of 775 miles the mainstem reservoirs occupy about 600 miles of the valley. Between Gavins Point Dam and Sioux City, Iowa, about 78 miles, the river is in its natural state.

*Authority.*—Several Congressional resolutions and three River and Harbor Act items, adopted or approved during the period 1938 to 1960 concerned entirely or partially with the reach between Sioux City, Iowa, and the Montana-North Dakota state line.

*Existing project.*—Six multiple-purpose reservoirs have been completed or are under construction by the Corps of Engineers. Five are within the study area—Garrison, Oahe, Big Bend, Fort Randall and Gavins Point—and the sixth, Fort Peck Reservoir, is about 186 miles upstream from the Montana-North Dakota state line. Improvement of the river in the interest of bank stabilization and navigation, provid-

ing a navigable channel 9 feet deep and 300 feet wide, from Sioux City downstream to the mouth near St. Louis is currently under way. A project for flood control and bank stabilization to protect an 18-mile reach extending upstream from **Sioux City was completed in 1961**. Also several smaller improvements to correct urgent flood and erosion problems have been or are being constructed.

*Problems.*—The Missouri River in the reach from Sioux City to Gavins Point Dam has meandered through a maximum width of seven miles with an average meander belt width of five miles over a period of many years. Within this reach are 87,000 acres of cropland, 37,000 acres of non-cropland, 280 miles of roads and highways, the town of Elkpoint, and other improvements which are subject to direct damage by erosion and river meander. The tributary trade area from which prospective commerce could be generated by improvement for navigation upstream from Sioux City includes 41 South Dakota counties and one county in Nebraska. Also, there is a need for additional facilities for recreation purposes and fish and wildlife enhancement in this reach.

*Recommended plan of improvement.*—The proposed plan would provide for stabilization of the river banks and provision of a navigable channel 9 feet deep and 300 feet wide from the vicinity of Yankton, South Dakota, to Sioux City by construction of dikes and revetment to maintain a smooth and continuous channel curvature, similar to the project from Sioux City to the mouth. The plan also included development of 12 recreation areas of 20 acres each, spaced along the river.

*Estimated cost (price level of July 1970)*

Federal .....	<sup>1</sup> \$35,981,000
Non-Federal .....	1,278,000
Total .....	37,259,000

<sup>1</sup> Exclusive of \$39,000 for navigation aids.

**PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)**

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$1,907,800	\$66,000	\$1,973,800
Maintenance and operation .....	1456,900	40,800	497,700
Total .....	2,364,700	106,800	2,471,500
Annual benefits:			
Damages prevented .....			1,516,200
Transportation savings .....			843,700
Recreation .....			400,700
Total .....			2,760,600

<sup>1</sup> Includes \$56,900 operation and maintenance of aids to navigation.

*Benefit-cost ratio.*—1.1.

*Local cooperation.*—Provide all lands, easements, rights-of-way, and relocations required for the bank stabilization and navigation improvements and related recreational facilities, including lands required for relocations and drainage outlets, now estimated at \$670,000; provide and maintain adequate public terminal and transfer facilities

open to all on equal terms; hold and save free from damages; operate, maintain, and replace the recreation facilities; contribute in cash an amount which, when added to the cost of lands, easements, and rights-of-way required for construction of the recreational facilities, represents 50 percent of the total cost of recreational lands and facilities, an amount presently estimated at \$608,000. Local interests have indicated willingness to provide requirements of local cooperation.

*Comments of the States and Federal agencies.—*

Department of the Interior: Generally favorable. The Fish and Wildlife Service recommended modification to insure mitigation of fish and wildlife losses by acquisition of land and water areas between river banks concurrently with acquisition of lands for other purposes, and also recommends the acquisition of 3,000 acres of additional lands to permit the development of three National wildlife refuges. The Chief of Engineers replied that the project cost estimate includes provision for purchase of lands for mitigation which would be done with acquisition of other project lands. The additional lands for wildlife refuges are mostly in Nebraska. Although South Dakota agrees, the Corps found the concerned agencies of Nebraska unwilling to concur in the proposal at this time. In the absence of State concurrence, the Chief of Engineers believes the matter should be dealt with in a separate report under the provisions of the Fish and Wildlife Coordination Act of 1958, when both States are agreeable to a plan.

Department of Agriculture: Favorable.

Department of Commerce: Favorable.

Department of Health, Education, and Welfare: Favorable.

State of North Dakota: Favorable.

State of South Dakota: Generally favorable.

State of Nebraska: Generally favorable.

*Remarks.*—The proposed plan of improvement would provide a stabilized navigation channel 9 feet deep and 300 feet wide from Sioux City, the present terminus of the existing 9 foot navigation project, upstream to the vicinity of Yankton, South Dakota. The improvements would eliminate the serious bank erosion and river meander problem along this portion of the river which threatens existing roads, bridges, and other facilities as well as curtailing the development of valuable agricultural lands.

COOS BAY, ORE.

(H. Doc. 91-151)

*Location.*—Coos Bay is located on the southwestern coast of Oregon, about 200 miles south of the Columbia River and 445 miles north of San Francisco Bay.

*Authority.*—Senate Committee on Public Works resolution adopted 2 April 1962; House Committee on Public Works resolution adopted 10 May 1962.

*Existing project.*—The existing Federal project consists of a twin-jetty protected entrance channel, interior channels, anchorage areas, and turning basins.



*Navigataion problem.*—Existing channel depths and widths are not adequate for modern cargo vessels under full load and the wave conditions in the entrance channel coupled with insufficient depths therein often cause vessel delays.

*Recommended plan of improvement.*—The proposed improvement generally consists of modifying the existing project by deepening and widening project channels to provide a 45-foot depth in the entrance channel, 35-foot depth in the interior channel, construction of an anchorage area, 1,200 by 2,000 feet to a depth of 35 feet near mile 6, deepening and widening existing turning basins and abandonment of existing authorized anchorages at mile 3.5 and mile 7.

*Estimated cost (1967 price level)*

Federal .....	\$9, 100, 000
Non-Federal .....	100, 000
Total .....	9, 200, 000

Federal costs are exclusive of \$100,000 first costs for navigation aids.

*PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)*

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$510, 000	\$6, 000	\$516, 000
Maintenance and operation <sup>1</sup> .....	204, 000	0	204, 000
Total .....	714, 000	6, 000	720, 000
Annual benefits: General navigation .....			882, 000

<sup>1</sup> Includes \$4,400 for maintenance of aids to navigation.

*Benefit-cost Ratio.*—1.2.

*Local Cooperation.*—The requirements of local cooperation conform to general policy for navigation projects. Local interests will be required to provide adequate public lands, easements, rights-of-way, spoil-disposal areas and retention works; hold and save the United States free from damage; provide depths in berthing areas and local access channels commensurate with depths in related project channels; accomplish all alterations to utilities as required for construction and maintenance of the project; and prevent pollution by the users of the waterways. Local interests have indicated willingness to fulfill the requirements of local cooperation.

*Comments of the State and Federal agencies.*—

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of Oregon: Favorable.

*Comments of the Bureau of the Budget.*—No objection.

*Remarks.*—The existing navigation channels are inadequate to meet the present and future needs of shipping and the presence of navigation hazards are a threat to life and property. The proposed modifications are urgently needed and will permit deep draft vessels to use the channels with transportation savings and under safer navigation conditions.

## LIDO KEY, FLA.

(H. Doc. 91-320)

*Location.*—This barrier island is located on the gulf coast of Florida about 45 miles south of Tampa.

*Authority.*—Senate Public Works Committee and House and Public Works Committee resolutions adopted 21 August 1964 and 3 September 1964, respectively.

*Existing project.*—There are no existing Federal beach erosion control projects in the study area.

*Erosion problem.*—Severe erosion, due principally to wave action, has caused recession of the shore along the middle half of the island. Existing shore developments are endangered and public beach areas have been lost.

*Recommended plan of improvement.*—Placement of fill along 6,200 feet of the middle gulf shore of Lido Key, with periodic nourishment of the restored beach as needed, to provide a level berm with an average width of 125 feet at elevation 5 feet above mean low water.

*Estimated cost (1968 price level)*

Federal	-----	\$240,000
Non-Federal	-----	434,000
Total	-----	674,000

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization	\$13,500	\$24,300	\$37,800
Periodic nourishment	26,500	47,900	74,400
Total	40,000	72,200	112,200
Annual benefits:			
Beach recreation			77,900
Land loss prevention			29,200
Damage prevention			7,000
Land enhancement			3,000
Total			117,100

*Benefit-cost Ratio.*—1.04.

*Local Cooperatio.*—Contribute in cash, subject to credit for eligible costs incurred for constructing part of the project, the required percentage of the first cost presently estimated at 64.4 percent (including contract price, engineering and design, and supervision and administration, and excluding the costs of lands, easements, rights-of-way, and relocations) of all items of work to be provided by the Corps of Engineers, the amount as presently estimated being \$434,100, to be paid in a lump sum prior to start of construction, or in installments prior to start of pertinent work items in accordance with construction schedules as required by the Chief of Engineers, the final apportionment of costs to be made after the actual costs have been determined; contribute in cash the required percentage of the nourishment costs presently estimated at 64.4 percent for the first 10 years of project life, now estimated at \$47,900 annually, such contributions to be prior to each nourishment operation; provide at their own expense all necessary lands, easements, rights-of-way, and relocations

required for construction and subsequent nourishment of the project; assure, after the first 10 years of project life, periodic nourishment of the restored beach during the project life as may be required to serve the intended purpose; assure continued public ownership of the shore upon which the amount of Federal participation is based, and its administration for public use during the project life; assure that water pollution that would endanger the health of bathers will not be permitted; hold and save the United States free from claims for damages that may result from construction or future nourishment of the improvement; and maintain, throughout the project life, at the part of the shore qualifying for 70 percent Federal participation, a zone that excludes permanent human habitation and areas that include but are not limited to recreational beaches, that satisfy criteria for conservation and development of the natural resources, that extend landward a sufficient distance to protect the uplands from damage, and that provide essentially full park facilities for public use, all of which shall meet the approval of the Chief of Engineers. Local interests have indicated a willingness and ability to meet these requirements.

*Comments of the State and Federal Agencies.—*

Department of the Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

State of Florida: Favorable.

*Comments of the Bureau of the Budget.—*The Bureau of the Budget notes that the proposal to reimburse local interests for work they do prior to authorization is not consistent with the prevailing reimbursement policy as contained in Section 215 of the 1968 River and Harbor Act. It does not believe that the situation described in the report merits an exception to Section 215. The Bureau further states that it understands that work proposed for accomplishment by local interests has not commenced. In order to allow local interests to proceed with the project in an expeditious manner, the Bureau suggests that consideration be given to authorization of the project under Section 201 of the 1965 Flood Control Act.

*Comments of the Secretary of the Army.—*The Secretary of the Army concurs in the views of the Bureau of the Budget. Since the project meets all the requirements of Section 201 of the 1965 Flood Control Act, he recommends that it be approved for appropriations.

*Remarks.—*This project is urgently needed to alleviate a severe erosion problem which has caused recession of the shore along the middle half of the island and is endangering existing shore development and public beach areas. The committee considers reimbursement or credit to be appropriated to the extent that local interests have already performed protective work for the public shores.

SECTION 102

The reported bill contains a substitute section 102 for that contained in the introduced bill. The proposed new section 102 would authorize the Secretary of the Army to study the feasibility of a project to deepen and maintain a navigation channel in St. Georges Creek, Maryland to the Harry Lundeberg School of Seamanship at Piney Point, Maryland.

## SECTION 103

Section 103 provides that the costs of operation and maintenance of the general navigation features of small boat harbor projects, authorized between January 1, 1970 and December 31, 1970, under the authority of this Act, section 201 of the Flood Control Act of 1965, or section 107 of the River and Harbor Act of 1960, shall be borne by the United States.

During the past year, small boat harbor projects submitted to the Congress for authorization in this Act or under the provisions of section 201 of the 1965 Act, and projects undertaken by the Secretary of the Army under the provisions of section 107 of the 1960 Act, have provided for maintenance of the general navigation features of these projects by local interests.

The long-standing policy has been that the Federal Government assumes the operation and maintenance costs of the general navigation features of these small boat harbor projects. The Committee heard testimony on, and considered very carefully, the Administration's proposal for a change to non-Federal maintenance, and concluded that such a change in policy was not justified. This section is intended to assure that any projects recommended or authorized during calendar year 1970 will be in accord with the long standing policy. It is the expectation and intention of the Committee that this long standing policy will continue to be applicable to all future projects of this nature.

## SECTION 104

This section increases the maximum daily rate paid consultants hired in connection with the civil functions of the Corps of Engineers from \$100 to an amount not to exceed the daily equivalent of the rate for GS-18.

The \$100 a day ceiling for these individuals has not kept pace with pay rates for other Federal employees. For many years, statutes providing for part-time members of boards and commissions and for temporary and intermittent services of experts and consultants frequently fixed a maximum daily rate of \$100, which until 1962 was above the daily equivalent for GS-18. Since 1962, however, with rates of the General Schedule increasing to a level more reasonably comparable to those in private employment, the trend has been to fix the pay ceiling for such services by reference to the daily equivalent for GS-18 (now \$136.56). This ceiling will adjust automatically in the future each time the rate for GS-18 is changed.

## SECTION 105

This section increases the compensation ceiling for a civilian member of the Board on Coastal Engineering Research from \$100 per day to an amount not to exceed the daily equivalent of the rate for GS-18. It would also change the citation to the Administrative Expense Act of 1946 to reflect the recodification of Title 5, United States Code.

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## SECTION 106

This section is similar to that in previous river and harbor acts providing for authorization of needed surveys at specifically named localities. It authorizes the Secretary of the Army to make survey investigations for navigation, and allied purposes and beach erosion and allied purposes at the following named localities:

Harbors and rivers in American Samoa and the territory of Guam, in the interests of navigation, flood control, and related water resources purposes.

Kanawha and James Rivers, with a view to determining the advisability of providing a waterway connecting the Kanawha River, West Virginia, and James River, Virginia, by canals and appurtenant facilities. The possibility of constructing a waterway connecting these rivers has been recognized since the days of George Washington and the Committee feels that the feasibility of such a proposal should be investigated at this time on the basis of applying modern technology and construction methods.

Ventura Marina to Ventura Keys, Ventura County, California in the interest of harbor and channel improvements.

Shooters Island, north of Staten Island, New York in the interest of its removal to provide a wider navigation channel in Arthur Kill.

Elk River, Stillpond Creek, Kent County, and Patapsco River, Brooklyn, Maryland, to provide deeper channels into Chesapeake Bay.

## SECTION 107

This section authorizes the Secretary of the Army, acting through the Chief of Engineers, to conduct a survey to the Great Lakes and Saint Lawrence Seaway to determine the feasibility of extending the navigation season, in accordance with the recommendations of the Chief of Engineers in his report entitled "Great Lakes and Saint Lawrence Seaway-Navigation Season Extension." Preliminary investigations conclude that practical measures are available for deciding waterways and lock structures, but that solutions to the icing problem on the Great Lakes and Saint Lawrence Seaway are complex, and additional studies are necessary.

The section also authorizes the Secretary of the Army, acting through the Chief of Engineers, in cooperation with interested Federal agencies (primarily the Coast Guard and the Maritime Administration) and non-Federal public and private interests, to undertake an action program to demonstrate the practicability of extending the navigation season. This program will complement the survey by serving as a means of testing and developing various methods which may be recommended and also by encouraging the participation

in the development and use of these methods and shipping interests.

The program will include, but not be limited to, ship voyages extending beyond the normal navigation season; observation and surveillance of ice conditions and ice forces; environmental and ecological investigations; collection of technical data related to improved vessel design; ice control facilities, and aids to navigation; physical model studies; and coordination of the collection and dissemination of information to shippers on weather ice conditions.

Subsection (c) of the section authorizes a study of ways and means to provide reasonable insurance rates for shippers and vessels engaged in waterborne commerce on the Great Lakes and Saint Lawrence Seaway beyond the present navigation season. One of the deterrents to winter navigation is the higher insurance rates for this season, and the provision of reasonable rates is a necessary part of any program for extending the navigation season.

#### SECTION 108

This section authorizes the Secretary of the Army, acting through the Chief of Engineers, to investigate, study, and undertake measures in the interests of water quality, environmental quality, recreation, fish and wildlife, and flood control, for the Cuyahoga River Basin, Ohio. The measures to be studied and undertaken would include, but not be limited to, clearing, snagging, and removal of debris from the river's bed and banks; dredging and structural works to improve streamflow and water quality; and bank stabilization by vegetation and other means. The studies and measures would be carried out in close cooperation with interested Federal and non-Federal agencies in order to ensure that a coordinated program would result. Non-Federal interests would be required to agree to such conditions of cooperation, consistent with other Federal water resources projects, as the Secretary of the Army, acting through the Chief of Engineers, determines appropriate. To the extent that diked disposal areas may be necessary, local interests should be permitted to select these site locations. No upstream settling basin shall be constructed if such construction is objected to by the appropriate political subdivisions.

The Cuyahoga River is one of the most polluted in the Nation. The purpose of this section is to establish, on a test-case basis, what can be done in the way of physical and engineering improvements, working in conjunction with other Federal and State treatment programs, to improve in conjunction with other Federal and State treatment programs, to improve the total quality of a river—both its appearance and its quality—so that it may assume, through recreational, environmental, wildlife, and water quality values, a functional and viable role in the area it serves.

#### SECTION 109

This section increases the authorization for repair and rehabilitation of the Illinois and Mississippi Canal in connection with its transfer to the State of Illinois. The canal is an obsolescent Federal navigation project which the State intends to develop for recreational use. The State has assumed custodial maintenance of the canal, and has agreed to accept title to it with the understanding that the needed repair of

existing facilities, including the Federally-owned and operated bridges across the canal, will be accomplished by the United States. The River and Harbor Act of 1958 authorized certain repair work and the transfer of the Canal to the State. The River and Harbor Act of 1962 increased the authorization for repairs, but the amount was not sufficient for the needed work. The Committee feels that it is appropriate that the Canal and its properties, including the Federal bridges, be put in good repair before being transferred to the State, and accordingly recommends the increase in authorization.

## SECTION 110

This section modifies the multiple-purpose plan for improvement of the Trinity River and tributaries authorized in the River and Harbor Act of October 27, 1965, by providing that the Trinity River Authority of Texas be given credit for the cost of aerial photography and mosaic preparation furnished to and accepted by the Secretary of the Army as part of the local cooperation required for the project. In connection with overall planning along the Trinity River Basin, the Trinity River Authority required aerial photographic mapping to be performed. For maximum usefulness, such work must be done during a (late winter) vegetative defoliation period. Similar overlapping work is required by the Corps of Engineers for overall planning of the Trinity River Project. Funds were not available to the Corps for this work at the appropriate time. In the interest of economy in the expenditure of public funds, the Authority has performed its work in accordance with Corps of Engineers criteria and specifications so that the resultant data would be mutually useful. It is apparent that the work performed by the Authority is in the overall public interest and that the Authority should be credited for their costs incurred for the applicable aerial photography in an amount not to exceed \$75,000.

## SECTION 111

This section provides for a program of construction of contained spoil disposal facilities in the Great Lakes in order to eliminate pollution associated with open water disposal of contaminated dredged spoil. The section is similar in import to a proposal submitted earlier this year by the Administration. It varies from the Administration proposal mainly in the area of cost sharing, by providing for waiver of the required local cooperation where the Administrator of the Environmental Protection Agency finds that the local interests are participating in an approved plan for the construction, modification, expansion, or rehabilitation of waste treatment facilities and are making progress satisfactory to the Administrator. The Committee feels that this provision is appropriate in view of the fact that the section contemplates the construction of disposal facilities only for a ten-year period, at which time the sources of the polluted materials are expected to be eliminated, and local interests who are expending money to eliminate the source of the pollutants should not be penalized by requiring them to participate in the costs of the interim measures authorized by this section.

The section provides that, in any case where the Administrator of the Environmental Protection Agency determines that dredged spoil from an area within an authorized Federal navigation project is significantly polluted, and the Secretary of the Army thereafter determines that dredged spoil disposal facilities are available, then open water disposal of such dredged spoil shall be discontinued. No determinations as to significant pollution and availability of disposal areas are to be made except after consultation with the Governors of the affected States.

The section authorizes the Secretary of the Army, acting through the Chief of Engineers, to construct contained spoil disposal facilities, subject to conditions of non-Federal cooperation, as soon as practicable. The priority of construction of the various facilities would be determined after considering the views and recommendations of the Administrator of the Environmental Protection Agency. Before establishing any spoil disposal facility, the Secretary of the Army would be required to obtain the concurrence of appropriate local governments and consider the views and recommendations of the Administrator and other appropriate heads of Federal agencies with respect to the location and the effect of the proposed facility on the quality of the water and land resources involved, and on the environment.

Subsection (f) provides that all costs of the disposal of dredged spoil from the connecting channels of the Great Lakes shall be borne by the Federal Government. This provision was added for two reasons: First, some of the connecting channels, while maintained by the United States, are in Canada, Second, the channels serve all of the Great Lakes, and it would be inequitable to assess the costs of disposal of channel materials to one particular locality simply because it happened to be geographically near the channel.

It is the intent of this section that the construction of any new facilities, or the expansion of existing ones, when accomplished for the purposes of this section, shall be done in accordance with the provisions of this section, notwithstanding any previously enacted provision of law or contract or agreement to the contrary.

The Committee recognizes that in certain cases the disposal of particularly hazardous spoil by open waters dumping would be so contrary to the public interest that it should not and will not be permitted at all, notwithstanding the fact that alternative disposal areas are not available.

#### SECTION 112

This section provides that when the United States acquires real property above the normal high water mark of the navigable waters of the United States for public use in connection with any improvement of rivers, harbors, canals, or waterway of the United States, the just compensation paid for real property taken shall be the fair market value of such property based upon all uses to which it may reasonably be put, including uses which may be dependent upon access to or utilization of such navigable waters. Where only a partial taking occurs, the section provides that no depreciation in the value of the remaining property shall be recognized, and no compensation shall be paid for any damages to such remaining property which result from



loss or reduction of access from such property to the navigable waterway because of the partial taking.

Under existing law, when riparian property adjacent to a navigable waterway is acquired by the United States for a water resource development project, the valuation of the property taken does not include any use of that property associated with access to and use of the waterway. However, when only a partial taking occurs, and some property remains adjacent to the waterway, there is deducted from the just compensation that would otherwise be paid the value of special benefits accruing to the remaining real property because of its access to or use of the waterway.

The Committee feels that this is an inequitable situation. The section accordingly provides for the valuation of the real property taken based upon its access to or use of the navigable waterway when, in fact, the use to which such property may reasonably be put is dependent upon such access to or utilization of the navigable water. This section makes no change in existing law with respect to the offsetting of special benefits to remaining real property against the just compensation that would otherwise be paid for the real property taken and for damages to remaining real property resulting the taking and the purpose for which the real property is taken.

#### SECTION 113

The purpose of this section is to amend the existing Corps of Engineers' authorities for construction of navigation and beach erosion control projects without specific congressional authorization. The amendment would increase the Federal expenditure limitations from the current \$500,000 per project to \$1,000,000 per project and the permissible total appropriations for a fiscal year from \$10 million to \$25 million.

#### SECTION 114

The Committee heard testimony on the problem of collection and removal of drift in New York Harbor. The current and continuous source of drift in the harbor is estimated to be over 29 million cubic feet of material from 1,972 derelict vessels, 149 deteriorated piers and wharves, other deteriorated non-repairable structures, debris lying along shores, 182 repairable piers and wharves, and other repairable shore structures. In order to reduce the hazards and damages to navigation and to restore the shores to full use, the Committee considers that the plan prepared by the Corps of Engineers, now on file in the Office of the Chief of Engineers, is proper and equitable and a project worthy of Federal participation.

#### SECTION 115

The initial Federal project for Santa Barbara Harbor authorized by the River and Harbor Act of 1935 provided for maintenance by the United States to the extent of dredging when necessary to prevent interference with navigation by shoaling at the harbor entrance. The cost of dredging was estimated at \$30,000 per year based on use of a hopper dredge and disposal at sea. The River and Harbor Act of 1945 modified the existing project to permit maintenance of the harbor

and the beaches to the east by a fixed sand-intercepting plant to be provided and operated by and at the expense of local interests, the United States to make available for such operation not to exceed \$30,000 per annum less the actual cost of any dredging of the harbor that might be necessary in addition to the operation of the plant. The fixed plant was never constructed and in lieu thereof local interests performed required maintenance dredging with a small pipeline dredge furnished by the City. A contract to this effect, and providing for Federal reimbursement of local interests in an amount not to exceed \$30,000 annually, was executed in 1956. Since that time maintenance dredging costs for the harbor have increased materially and over the past five years have averaged \$100,500 per annum. As a matter of equity, this section would authorize Federal maintenance of the harbor as is done for other navigation projects throughout the country.

#### SECTION 116

This section modifies the multiple-purpose plan for improvement of the Arkansas River and tributaries, authorized by the River and Harbor Act of July 24, 1946, by authorizing construction of an additional public roadway crossing of Spaniard Creek as a replacement for crossings abandoned in accordance with the present public road relocation plan of the project. The committee considers that the construction of this replacement crossing will more equitably ameliorate project caused disturbance to the local road system by a better restoration of pre-project traffic patterns, and thus serve the public interest.

#### SECTION 117

The elimination of fallen trees, roots, and other debris from the North Branch of the Chicago River should vastly improve the environmental and aesthetic aspects of the river. Also, significant public health benefits should accrue to individuals residing in the area. The clearing of the channel is considered warranted.

#### SECTION 118

This section identifies title I of the bill as the River and Harbor Act of 1970.

### ANALYSIS OF TITLE II

#### SECTION 201

This section continues established provisions of local cooperation, and provides that project authorization shall expire if local cooperation is not forthcoming within 5 years after appropriate notification and continues current coordination procedures with States and agencies. It also summarizes the project authorizations for flood control, and multiple-purpose works in Title II. The table following lists the projects, project document numbers, and estimated Federal costs. Pertinent information follows for each project.

## FLOOD CONTROL PROJECTS

Projects	Document number and Congress	Federal cost of new work
Eastern Rapides and South Central Avoyelles Parishes, La.....	S. 91-113	(\$15,333,000)
Mill Creek, Ohio.....	H. 91-413	32,642,000
Blue River, Kansas City, Mo. and Kans.....	H. 91-332	40,000,000
Oahe Dam and Reservoir, Missouri River, N. Dak.....	S. 91-23	732,000
Red Run drain and lower Clinton River, Mich.....	H. 91-	40,000,000
Ellicott Creek, N.Y.....	H. 91-	19,070,000
Wild Rice River, Minn.....	H. 366, 90-	8,359,000
Sheyenne River, N. Dak.....	H. 91-330	20,000,000
Souris River, N. Dak.....	H. 91-321	29,240,000
Mississippi River, Davenport, Iowa.....	H. 91-	12,263,000
Arcadia Reservoir, Deep Fork River, Okla.....	H. 91-299	24,900,000
Arkansas-Red Rivers, water quality control, pt. II, Oklahoma, Texas, and Kansas.....	S. 91-	40,000,000
Sabine River Basin, Tex. and La.....	H. 91-392	13,830,000
Goleta and vicinity, California.....	H. 91-	37,260,000
Merced County streams, California.....	H. 91-	40,000,000
Cottonwood Creek, Calif.....	H. 91-422	11,110,000
Portugues and Bucana Rivers, P.R., Portugues Dam and Reservoir.....		16,351,000
Cerrillos Dam and Reservoir.....		14,295,000
Ponce Channel improvement.....		
Total flood control, 19 projects.....		400,052,000

## EASTERN RAPIDES AND SOUTH-CENTRAL AVOYELLES PARISHES, LA.

(S. Doc. 91-113)

*Location.*—The watershed area is located in central and south-central Louisiana about 150 miles northwest of New Orleans. It extends along the west side of the West Atchafalaya and Atchafalaya Basin Floodway to the vicinity of Charenton.

*Authority.*—Senate Public Works Committee resolution adopted 10 February 1964.

*Existing projects.*—Existing Federal projects within and bordering the area have been constructed or authorized for construction under the Mississippi River and Tributaries Project for protection against floods on the Red and Mississippi Rivers. These projects include: main line levees along the Red River; the Atchafalaya Basin and West Atchafalaya Floodways to carry excess Mississippi River flood flows; and channel diversions, enlargements, control structures and drainage improvements in the landside areas to rectify the drainage intercepted by the construction of the floodway levees. Also, non-Federal interests have constructed many miles of channel and ditch improvements with related drainage works within the area.

*Flood problem.*—About 206,000 acres of lands in the flood plains and adjacent areas are subject to frequent flooding under existing conditions resulting from inadequate capacity of the existing streams and channels and insufficient outlets resulting from construction of the levee systems in the area.

*Recommended plan of improvement.*—A major flood control and drainage outlet consisting of the enlargement of about 75 miles of existing outlet channels, construction of about 8 miles of new channels and about 17 miles of spoil bank levees, a water-level control weir at Lake Pearl, a control structure in the West Atchafalaya Basin Protection Levee to divert the flood flows into the floodway, and about 5 miles of new channels in the floodway. The Soil Conservation Service is preparing companion work plans recommending the construction of lateral and on-farm drainage improvements in the watersheds

tributary to the major outlet works under provisions of PL 566. The improvements to be constructed under the two programs are needed to provide the drainage and flood damage reduction.

## ESTIMATED COST (PRICE LEVEL OF JULY 1967)

	Corps of Engineers	Soil Conservation Service
Federal.....	\$15,333,000	(1)
Non-Federal.....	1,180,000	(1)
Total.....	16,513,000	\$9,394,000

<sup>1</sup> Breakdown not available.

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Corps of Engineers:			
Interest and amortization.....	\$870,100	\$72,400	\$942,500
Operation, maintenance and replacement.....	18,000	68,800	86,800
Subtotal.....	888,100	141,200	1,029,300
Soil Conservation Service:			
Interest and amortization.....	NA	NA	589,500
Operation, maintenance, and replacement.....	NA	NA	147,800
Subtotal.....			737,300
Total annual charges (combined).....			1,766,600
Annual benefits:			
Flood damages prevented.....			139,400
Increased land utilization.....			2,909,700
Commercial fisheries.....			225,000
Fish and wildlife.....			4,500
Savings in authorized improvements.....			61,300
Total annual benefits (combined) <sup>1</sup> .....			3,339,900

<sup>1</sup> Benefits are not separable. Total benefits are based on combined Corps of Engineers flood control outlet and Soil Conservation Service drainage improvements.

*Combined benefit-cost ratio.—1.9.*

*Local cooperation.*—The recommended plan below mile 41.6 is to provide a drainage outlet made necessary by the construction of flood-way levees and under existing authorization as part of the Flood Control, Mississippi River and Tributaries Project no local cooperation is required. For that portion of the project above mile 41.6, local interests required to furnish: all lands, easements, and rights-of-way, except the lands for conservation of fish and wildlife resources at Lake Pearl; all modifications to roads, highways and utilities; hold and save, maintain and operate; prevent encroachment on improved channels; publicize flood plain information in the area concerned, and, at least annually, notify those affected that the project will afford only partial protection for areas subject to flooding; construct associated interior drainage works. Local interests have indicated a willingness to meet the requirements of local cooperation.

*Comments of the State and Federal agencies.—*

Department of the Interior: Favorable.

Department of Agriculture: Favorable.



Department of Health, Education, and Welfare: Favorable.  
 Department of Transportation: Favorable.  
 State of Louisiana: Favorable.

*Comments of Office Management and Budget.*—The Office notes that acquisition of Lake Pearl is recommended as a cost to the Federal Government. Acquisition costs are estimated at \$533,000 for mitigation and enhancement of the commercial crayfish industry. These costs are not properly assignable to the Federal Government. Federal acquisition of Lake Pearl would not be appropriate since the authorities of the Federal agencies, the Departments of Agriculture and Interior, responsible for commercial fishing of this nature are limited to technical assistance.

*Remarks.*—The authorized plan of improvement will reduce head water flood damages, provide a major outlet for improved drainage so that full agricultural yields can be realized, and will enhance fishery resources.

#### MILL CREEK, OHIO

(H. Doc. 91-413)

*Location.*—Mill Creek rises in the southeastern part of Butler County, Ohio, and flows in a southerly direction across Hamilton County and through the city of Cincinnati to its confluence with the Ohio River in Cincinnati. Mill Creek is about 28 miles long and drains an area of 165 square miles.

*Authority.*—House Public Works Committee resolution adopted 24 June 1965; Senate Public Works Committee resolution adopted 31 May 1967; and House Public Works Committee resolution adopted 19 October 1967.

*Existing projects.*—The Corps of Engineers completed a barrier dam and pumping plant across the mouth of Mill Creek in 1948. This project protects the Mill Creek valley against backwater flooding from the Ohio River. In 1952 the Corps of Engineers completed the West Fork Reservoir; this reservoir has practically eliminated flood damages on the West Fork of Mill Creek below the dam and has reduced flood damages on Mill Creek mainstem below West Fork.

*Flood problem.*—The flood problem results from and is aggravated by increasing urbanization of the flood plain areas. By the year 1989, it is expected that the flood plain will be completely urbanized with additional increases in flood flows.

*Recommended plan of improvement.*—The project consists of 19 miles of channel improvement, 12 miles of levees averaging in height from 4 to 5 feet, 9 pumping plants, modification of 38 bridge crossings, various other transportation and utility alterations and relocations and appurtenant works. The plan includes provision of general recreational facilities at selected locations along the channel improvement route.

#### *Estimated cost (November 1969 price level)*

Federal -----	\$32,642,000
Non-Federal -----	9,366,000
Total -----	42,008,000

## PROJECT ECONOMICS

(Interest rate of 5½ percent)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization.....	\$1, 927, 600	\$566, 000	\$2, 493, 600
Operation, maintenance, and replacement.....	400	227, 000	227, 400
Total.....	1, 928, 000	793, 000	2, 721, 000
Annual benefits:			
Flood control.....	8, 412, 000		
General recreation.....	551, 000		
Total.....	8, 963, 000		

*Benefit-cost ratio.*—3.3.

*Local cooperation.*—Provide without cost to the United States all lands, easements, and rights-of-way necessary for construction of the project; hold and save the United States free from damages due to the construction works; maintain and operate all the works after completion in accordance with regulations prescribed by the Secretary of the Army; provide without cost to the United States all modifications and relocations of buildings, utilities, street and foot bridges, sewers, and related and special facilities as necessary for the construction of the project; prevent encroachment on improved channels and on ponding areas which would impair capacities; provide all additional lands, or rights in lands required to insure public control of recreational development; when the appraised value of the recreational land is less than 50 percent of the recreational development, make additional contributions sufficient to bring the non-Federal share at least to that level; operate and maintain the recreational area; and assure access to the area to all on equal terms. Local interests have indicated a willingness to provide the requirements of local cooperation.

*Comments of the State and Federal agencies.*—

Department of the Interior: Favorable.

Department of the Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of Ohio: Favorable.

*Comments of the Office of Management and Budget.* No objection.

*Remarks.*—This project will both reduce urban flooding and provide recreational facilities at selected locations along the channel improvement route. The high benefit-cost ratio reveals that this project is a sound investment. This authorization provides for possible future construction of works in Butler County, Ohio, if the Department of Agriculture is unable to under take such work.

BLUE RIVER, VICINITY OF KANSAS CITY, MISSOURI AND KANSAS

(H. Doc. 91-332)

*Location.*—The Blue River is a right-bank tributary of the Missouri River and drains an area of 272 square miles in vicinity of the metropolitan areas of Kansas City, Missouri and Kansas.

*Authority.*—Senate Public Works Committee resolution adopted 20 September 1961 and House Public Works Committee resolution adopted 10 May 1962.

*Existing project.*—The levee protecting the East Bottoms Unit of the Greater Kansas City Flood Protection Project from Missouri River floods extends along the left bank of the Blue River to a tieback point about 2 miles from the mouth. During the 1930's the Work Projects Administration in cooperation with Kansas City, Missouri, cleared and improved the Blue River channel between mile 3.0 and mile 11.0, and the lower 4.3 miles of the Brush Creek channel was straightened and a considerable portion of the streambed was paved.

*Flood problem.*—The major problem in the basin is the widespread and damaging floods which destroy property and cause hazards of life, particularly in the highly industrialized lower basin area. The most severe flood of record in the Blue River basin occurred in September 1961, when flood damages amounted to nearly \$8 million and caused two deaths. With progressive urbanization of the basin, future flood damages and hazard to life is expected to be much more serious. Another major problem is the need for streamflow supplementation to alleviate the poor quality and unsightliness of low-flow conditions. There are definite needs for water-based recreation and enhancement of the fish and wildlife resources.

*Recommended plan of improvement.*—The recommended plan of improvement for the basin has two elements: cleaning, enlarging, straightening, and some paving of the lower 12 miles of the Blue River channel; and, the construction of a system of four upstream multiple-purpose reservoir, namely, Wolf-Coffee Creek Reservoir, Tomahawk Creek Reservoir, Indian Creek Reservoir, and Mill Creek Reservoir. Also, the advance acquisition of title to lands as may be required to preserve the reservoir sites against incompatible developments and participation in the construction or reconstruction of transportation and utilities in advance of project construction is recommended.

*Estimated cost (price level of July 1968)*

Federal .....	<sup>1</sup> \$101, 269, 000
Non-Federal .....	5, 000, 000
Total .....	106, 269, 000

*Reservoirs*

Wolf-Coffee Creek .....	\$20, 252, 000
Tomahawk Creek .....	19, 087, 000
Indian Creek .....	15, 874, 000
Mill Creek .....	8, 056, 000
Total reservoirs .....	63, 269, 000

*Local protection works*

Blue River Channel .....	\$43, 000, 000
Total project .....	106, 269, 000

<sup>1</sup> Includes \$6,242,000 Federal first costs reimbursable under provisions of Recreation Act. The net cost to the Federal Government would be an estimated \$95,027,000.

## PROJECT ECONOMICS

[Interest rate of  $5\frac{1}{8}$  percent]

	Federal	Non-Federal	Total
Annual charges:			
Reservoirs:			
Interest and amortization.....	\$3,504,000		\$3,504,000
Maintenance, operation, and replacement.....	111,000	\$80,000	191,000
Total.....	3,615,000	80,000	3,695,000
Local protection works:			
Interest and amortization.....	1,961,000	258,000	2,219,000
Maintenance, operation and replacement.....		20,000	20,000
Total.....	1,961,000	278,000	2,239,000
Total project:			
Interest and amortization.....	5,465,000	258,000	5,723,000
Maintenance, operation, and replacement.....	111,000	100,000	211,000
Total.....	5,576,000	358,000	5,934,000

*Annual benefits*

Reservoirs:	
Flood control.....	3,534,900
Water quality.....	625,000
Recreation.....	1,416,000
Fish and wildlife enhancement.....	354,000
Local protection works: Flood control.....	2,509,800
Total.....	8,439,700

*Benefit-cost ratios*

Reservoirs:	
Wolf-Coffee Creek.....	2.2
Tomahawk Creek.....	1.4
Indian Creek.....	1.1
Mill Creek.....	1.6
Local protection works: Blue River Channel.....	1.1
Total project.....	1.4

*Flood control.*—For the main stem channel improvement local interests are required to furnish the usual a, b, c's. Also, they are required to provide guidance and leadership in preventing unwise and uneconomical future development of the flood plain area, and to annually inform affected persons that complete flood protection is not provided.

*Water quality control.*—Local interests are required to undertake all practicable measures to control pollution of the streams subject to low flow augmentation from the reservoir system by adequate treatment or other methods of controlling wastes at their source.

*Recreation and fish and wildlife.*—Administer project lands and water areas, repay one-half the separable first costs allocated to recreation and fish and wildlife enhancement estimated at \$6,242,000 for the four reservoirs; and operate, maintain, and replace lands and facilities for recreation and fish and wildlife enhancement estimated at \$80,000 annually.

*Other.*—Local interests are also required to indemnify the United States against water rights claims and use the water in a manner consistent with Federal and State laws.



Local interests have indicated their willingness to meet these requirements.

*Comments of the States and Federal agencies.—*

Department of the Interior: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

Federal Power Commission: Favorable.

State of Kansas: Favorable.

State of Missouri: Favorable.

*Comments of the Bureau of the Budget.—*No objection.

*Comments of the Secretary of the Army.—*The Secretary of the Army noted that land values in the proposed reservoir area have increased in recent years and continued escalation could preclude construction of one or more reservoirs. The Secretary has asked the Chief of Engineers to reappraise the economic justification of the reservoirs and to reconsider the combination of channel improvement and reservoirs during the advanced engineering and design studies.

*Remarks.—*This system of 4 upstream reservoirs with downstream channel works will effectively reduce the serious and widespread flood problem along the Blue River in the Metropolitan areas of Kansas City, Missouri and Kansas. The proposed reservoirs would be located in an area that is rapidly changing from rural to suburban, which could prohibit reservoir construction in the future if action is not undertaken to insure preservation of those sites. The recommendation of the Chief of Engineers concerning advance acquisition of lands is considered essential to providing this urgently needed flood protection.

MODIFICATION OF LAND PURCHASE PLAN FOR OAHE DAM  
AND RESERVOIR, MISSOURI RIVER, N. DAK.

(S. Doc. 91-23)

*Location.—*Oahe Dam is located on the Missouri River approximately 6 miles north of Pierre, South Dakota, and impounds water approximately 230 miles upstream to a point about 10 miles south of Bismark, North Dakota. The land proposed to be acquired is in North Dakota.

*Authority.—*The project was authorized by the Flood Control Act of 1944. The report was prepared in accordance with the Fish and Wildlife Coordination Act.

*Existing project.—*Oahe Lock and Dam project is now complete except for some recreation areas and service roads.

*Recommended plan of improvement.—*Provides for the purchase in fee title of an additional 3,185 acres of land adjacent to project lands in North Dakota for a wildlife management area.

<i>Estimated cost (price level 1968)</i>	
Land Acquisition-----	\$637, 000
Development -----	95, 000
Total -----	732, 000

*Benefit-cost ratio.*—1.7.

*Local cooperation.*—The North Dakota Game and Fish Department will accept administration of and will manage all land made available to them for a wildlife management area.

*Comments of the State and Federal agencies.*—

Department of Interior: Favorable.

North Dakota Fish and Game Department: Favorable.

State of North Dakota: Favorable.

*Office of Management and Budget.* No objection.

*Comments of the Secretary of the Army.* Favorable.

*Remarks.*—The additional lands are necessary for fish and wildlife purposes and the intention is the State will report periodically to the Corps of Engineers on utilization of these lands for these purposes.

#### RED RUN DRAIN AND LOWER CLINTON RIVER, MICH.

H. Doc. 91- )

*Location.*—The Red Run and lower Clinton River are located largely in Macomb and Oakland Counties in the northern suburbs of metropolitan Detroit.

*Authority.*—Section 206 of the Flood Control Act of 1965, Section 206 of P. L. 85-500, and House of Representatives Public Works Committee resolution adopted 31 July 1957.

*Existing projects.*—There are two existing Federal flood control projects, the Red Run Drain and the Clinton River Cut-Off Canal, which provide partial protection.

*Flood problem.*—Damaging floods in the area occur every few years. Fourteen floods occurred since 1938. These floods cause overbank flows as well as extensive backwater in combined sewers. A flood of ten-year frequency causes damages of about \$45 million. A flood of 50-year frequency causes damages of about \$120 million. Such damages will increase over time because of progressive urbanization and increasing runoff from rainfall.

*Recommended plan of improvement.*—The recommended plan of improvement provides for about 19 miles of continuous improved flood control and major drainage channel consisting of enlarging and paving the existing Red Run Drain project; providing a natural floodway with channel improvements in the lower Clinton River from the Red Run Drain to a point downstream; and enlarging and paving the remaining downstream reach of the Clinton River to Lake St. Clair, via the existing Cut-Off Canal project. A nominal amount of recreation facilities would also be provided.

<i>Estimated cost (price level of April 1970)</i>	
Federal .....	\$122, 586, 000
Non-Federal .....	47, 586, 000
Total .....	170, 172, 000

## PROJECT ECONOMICS

(Interest rate of 5½ percent)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization.....	\$7,123,000	\$2,765,000	\$9,888,000
Operation, maintenance, and replacement.....		439,000	439,000
Total.....	7,123,000	3,204,000	10,327,000
Annual benefits:			
Damages prevented.....			38,226,000
Recreation.....			874,000
Total.....			39,100,000

*Benefit-cost ratio.*—3.8.

*Flood protection and drainage.*—Furnish all lands, easements, and rights-of-way; perform all alterations and relocations except to railroad bridges; make a cash contribution presently estimated at \$27,070,000 to bring the non-Federal share of the first cost for the Red Run Drain portion to 50%; hold and save; operate and maintain; restrict development and prevent encroachment in the interest of flood control and project efficiency; regulate water quality; and hold and save from a proposed non-Federal pollution abatement structure at the head of the existing project in a reach to be abandoned.

*Recreation.*—Furnish all lands and make a cash contribution presently estimated at \$1,536,000 to bring the non-Federal share of the first cost to 50%; operate and maintain; and provide equal access to all.

*Comments of the State and Federal agencies.*—

Department of Interior: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of Michigan: Favorable.

*Remarks.*—Flood damages occur with increasing frequency from overbank flows and extensive backwater in combined sewers in the area of the Red River Drain and lower Clinton River in Oakland and Macomb Counties, Michigan. Channel improvements are needed to protect these urbanizing northern suburbs of metropolitan Detroit. Recreation facilities would also be provided in this heavily populated area.

ELLICOTT CREEK, N.Y.

(H. Doc. 91- )

*Location.*—The Ellicott Creek basin is located in western New York in the counties of Erie, Genesee and Wyoming. Ellicott Creek is the largest tributary of Tonawanda Creek and it drains about 110 square miles.

*Authority.*—Section 214 of the 1965 Flood Control Act and Senate Public Works Committee Resolution adopted 28 May 1968.

*Existing project.*—The village of Williamsville improved Ellicott Creek for a distance of about 1,700 feet in 1929. In 1932 the town of Amherst made improvements on Ellicott Creek for a distance of 2,800

feet upstream from the village of Williamsville. The Federal Government cleared and snagged a 7-mile reach of lower Ellicott Creek. Erie County constructed in 1965 a diversion channel between Ellicott Creek and Tonawanda Creek.

**Flood problem.**—Flooding along Ellicott Creek has inundated large areas of land in the city of Tonawanda and the towns of Tonawanda, Amherst, Cheektowaga, and Lancaster. The 1960 flood inundated approximately 20 acres in the town of Tonawanda, including the city of Tonawanda, 3,200 acres in the town of Amherst, 450 acres in the town of Cheektowaga, and 890 acres in the town of Lancaster. The plan of improvement would eliminate 92 percent of the average annual damages.

**Recommended plan of improvement.**—The project consists of a dam and reservoir of 27,500 acre-feet capacity for flood control, water quality, water supply, recreation, and fish and wildlife enhancement and about three miles of minor channel improvement in the towns of Tonawanda and Amherst.

*Estimated cost (October 1969 price level)*

Federal .....	<sup>1</sup> \$19,070,000
Non-Federal .....	3,640,000
<b>Total .....</b>	<b>22,710,000</b>

<sup>1</sup> Includes \$2,040,000 of deferred construction cost for recreation, and non-Federal reimbursement of \$5,230,000 of which \$1,470,000 would be for water supply, \$2,740,000 for initial recreation and \$1,020,000 for deferred recreation.

**PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)**

	Federal	Non-Federal	Total
<b>Annual charges:</b>			
Interest and amortization .....	\$683,000	\$439,000	\$1,122,000
Operation and maintenance and major replacement .....	66,000	487,000	553,000
<b>Total .....</b>	<b>749,000</b>	<b>926,000</b>	<b>1,675,000</b>
<b>Annual benefits:</b>			
Flood control .....			679,000
Water quality control .....			42,000
Water supply .....			106,000
General recreation and fish and wildlife .....			1,127,000
<b>Total .....</b>			<b>1,954,000</b>

*Benefit-cost ratio.*—1.2.

**Local cooperation.**—For the proposed channel improvement, provide the normal a-b-c's and accomplish modifications to or relocations of four highway bridges and numerous drainage outlets and appurtenance structures. Also, to prescribe and enforce regulations to prevent encroachment on channels necessary to proper functioning of the work.

For the multiple-purpose reservoir, provide reimbursement: in accordance with the Water Supply Act of 1958, an amount estimated to be \$1,470,000 in first costs; and in accordance with the Federal Water Projects Recreation Act of 1965, an amount estimated to be \$2,740,000 initially in first costs, and \$1,020,000 in deferred costs. Also, pay the costs allocated to recreation and fish and wildlife enhance-



ment that exceed 50 percent of the total project costs, a contribution presently estimated at \$3,010,000. Bear all costs of operation, maintenance, and replacement of: recreation and fish and wildlife lands and facilities, presently estimated at \$465,000 annually; and \$8,000 annually for water supply. Other requirements include providing leadership in restricting unwise development of flood plains, prevent encroachment, and prevent removal of streamflow made available for water quality control. Also to hold and save the United States free from damages due to water-rights claims resulting from construction and operation of the project. Local interests have indicated a willingness to provide the requirements of local cooperation.

*Comments of the State and Federal agencies.*—

Department of the Interior: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of New York: Favorable.

*Remarks.*—Reservoir storage would be for flood control, municipal water supply, water quality control, recreation, and fish and wildlife enhancement. There would also be channel improvement for flood control. The plan of improvement would eliminate 92 percent of the average annual damages.

The first of the committee amendments to this bill would add to this project a requirement that prior to construction the Secretary of the Army is to investigate all possible alternative methods to accomplish the purposes of the project and report thereon to Congress.

### WILD RICE RIVER, MINN.

(H. Doc. 366, 90th Cong.)

*Location.*—In Northwestern Minnesota in the Red River of the North basin.

*Authority.*—Senate Public Works Committee Resolution adopted 15 June 1950 and House Public Works Committee Resolutions adopted 27 June and 19 July 1950.

*Existing project.*—The existing project for Wild Rice-Marsh River consists of 39 miles of downstream channel improvement work completed in 1954.

*Flood problem.*—Flooding in the Wild Rice River basin has been frequent and damaging and has aggravated flood conditions downstream along the Red River of the North. In the recent flood of 1969, damages of about \$1,500,000 were experienced in the Wild Rice River basin alone. The record flood of 1909 inundated the entire community of Ada and about 100,000 acres of farm lands along the river. In addition to the flood problem, there is a growing need for additional water-based recreation and fish and wildlife enhancement.

*Recommended plan of improvement.*—Twin Valley Dam and Reservoir for flood control, recreation, and fish and wildlife enhancement; more detailed studies following authorization for conservation, improvement and development of fish and wildlife resources; advance land acquisition following authorization; and participation in construction or reconstruction of transportation and utility facilities in advance of project construction.

*Estimated cost (price level of 1966)*

Federal	-----	<sup>1</sup> \$8,359,000
Non-Federal	-----	-----
Total	-----	8,359,000

<sup>1</sup> Includes non-Federal reimbursement of \$156,000 for recreation and fish and wildlife enhancement costs.

PROJECT ECONOMICS (INTEREST RATE OF  $3\frac{1}{4}$  PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization	\$285,700	\$4,600	\$290,300
Maintenance and operation and replacement	12,600	7,300	19,900
Total	298,300	11,900	310,200
Annual benefits:			
Flood control			363,700
Recreation and fish and wildlife enhancement			35,300
Area redevelopment			66,300
Total			465,300

*Benefit-cost ratio.*—

1.5 Based on interest rate of  $3\frac{1}{4}$  percent).

1.1 (Based on interest rate of  $5\frac{1}{8}$  percent and 1970 price level).

*Local cooperation.*—Administer project land and water areas for recreation and fish and wildlife enhancement; pay, contribute in kind, or repay (which may be through user fees) with interest, one-half of the separable cost allocated to recreation and fish and wildlife enhancement, presently estimated at \$115,000 for initial development and \$41,000 for future facilities; bear all costs of operation, maintenance, and replacement of recreation and fish and wildlife lands and facilities, presently estimated at \$7,300 annually; prevent encroachment which would reduce the flood-carrying capacities of the Wild Rice and Marsh River channels below the proposed reservoir; at least annually inform affected interests that the project will not provide complete flood protection; provide guidance and leadership in preventing unwise future development of the flood plain by use of appropriate flood plain management techniques to reduce flood losses; and hold and save the United States free from damages due to water rights claims resulting from construction and operation of the project.

*Comments of the State and Federal agencies.*—

Department of the Interior: Favorable.

Department of Agriculture: Favorable

Department of Commerce: Favorable.

Department of Transportation: Favorable.

Department of Health, Education, and Welfare: Favorable.

Federal Power Commission: Favorable.

State of Minnesota: Favorable.

*Comments of the Bureau of the Budget.*—No objection.

*Remarks.*—Flooding along the Wild Rice River has been frequent and a dam and reservoir is needed to protect the town of Ada, Minnesota, and about 42,000 acres of agricultural lands in the Wild Rice-Marsh River basin. In addition, the project will provide opportunities for outdoor recreation and fish and wildlife enhancement.

## SHEYENNE RIVER, N.D.

(H. Doc. 91-330)

*Location.*—The Sheyenne River basin is located in the southeastern portion of North Dakota.

*Authority.*—Senate Public Works Committee Resolution adopted 15 June 1950 and House Public Works Committee Resolutions adopted 27 June 1950 and 19 July 1950.

*Existing project.*—The existing projects in the Sheyenne River basin include the Baldhill Dam and Lake Ashtabula Lake, constructed in 1951 and improvement of the lower 26.9 mile reach of the Rush River, completed in 1958.

*Flood problem.*—Flooding in the Sheyenne River basin has been frequent and damaging and has aggravated flood conditions downstream along the Red River of the North. It is estimated that a flood of the magnitude of the recent 1969 flood would cause damages, under the conditions of 1975, of about \$7,500,000 in the Sheyenne River basin. The flood of record occurred in 1882.

*Recommended plan of improvement.*—Kindred Dam and Reservoir on the Sheyenne River for flood control, water quality control, recreation, and fish and wildlife. Also, a revised operating procedure at Lake Ashtabula Reservoir to provide additional control of spring floods and appropriate flood plain management measures at downstream communities and to delete the project, authorized by the 1948 and 1950 Flood Control Acts, on the lower 48.8 miles of the Sheyenne River.

*Estimated cost (Price level of March 1968)*

Federal .....	\$20,000,000
Non-Federal .....	---
Total .....	<sup>1</sup> 20,000,000

<sup>1</sup> Includes non-Federal reimbursement of \$682,000 for recreation and fish and wildlife costs.

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization.....	\$1,053,600	\$49,500	\$1,103,100
Maintenance, operation, and replacement.....	114,400	9,300	123,700
Economic loss adjustment <sup>1</sup> .....	16,100	---	16,100
Total.....	1,184,100	58,800	1,242,900
Annual benefits:			729,900
Damages prevented.....	---	---	427,300
Water quality control.....	---	---	252,200
General recreation.....	---	---	78,500
Fish and wildlife.....	---	---	---
Total.....	---	---	1,487,900

<sup>1</sup> Economic loss adjustment reflects net value of production foregone from reservoir lands.

*Benefit-cost ratio.*—1.2.

*Local cooperation.*—Administer project land and water areas for recreation and fish and wildlife enhancement; pay, contribute in kind, or repay (which may be through user fees) with interest, one-half of

the separable cost allocated to recreation and fish and wildlife enhancement, presently estimated at \$382,000 for initial development and \$300,000 for deferred construction of future facilities; bear all costs of operation and maintenance and replacement of lands and facilities for recreation and fish and wildlife enhancement presently estimated at \$50,400 annually; prevent encroachment which would reduce the flood carrying capacities of the Sheyenne River channel below Baldhill Dam and below the proposed dam near Kindred; at least annually inform affected interests that the project will not provide complete flood protection; provide guidance and leadership in preventing unwise future development of the flood plain by use of appropriate flood plain management techniques to reduce flood losses; and hold and save the United States free from damages due to water rights claims resulting from construction and operation of the project. Local interests have indicated their willingness to meet the requirements of local cooperation.

*Comments of the State and Federal Agencies.—*

Department of the Interior: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Federal Power Commission: Favorable.

Department of Transportation: Favorable.

State of North Dakota: Favorable.

*Comments of the Office of Management and Budget.—*No objection.

*Remarks.—*The State of North Dakota has strongly indorsed this project and request its early construction. The project would solve a very serious flood problem and provide storage for water quality control and for recreation and fish and wildlife.

### SOURIS RIVER, N. DAK.

(H. Doc. 91-321)

*Location.—*The Souris River drains 24,800 square miles of semiarid area and the headwater of the basin originates in southeastern Saskatchewan, Canada, and in a small tip of northeastern Montana. The river flows south from Saskatchewan into North Dakota and forms a "U" within the state before flowing north into southwestern Manitoba, Canada, where the Souris River joins the Assiniboine River.

*Authority.—*A Senate Public Works Committee Resolution adopted 28 March 1949, and House Public Works Committee Resolution adopted 29 June 1955.

*Existing project.—*Protection works from flash floods have been developed on Bonnes Coulee at Velva, North Dakota and vicinity. The Fish and Wildlife Service has constructed three migratory waterfowl refuges on the Des Lacs and Souris Rivers. The upper Souris migratory waterfowl refuge project, located along the Souris River northwest of Minot in Ward and Renville Counties, includes a large storage reservoir known as Lake Darling; this reservoir has a storage capacity of 112,000 acre-feet and has been operated such that 20,000 acre-feet of storage is available each spring for flood control. The U.S. Soil Conservation Service has underway plans for flood control in Boundary Creek which include two small retarding dams and extensive channel improvements. Two active irrigation projects, the Eaton Flood Irrigation project and the Judge A. M. Christianson project,



are located in the basin. Private and local government interests have constructed a number of low-head dams for irrigation, recreation, and water supply.

*Flood problem.*—Data on floods antedating the period of record dating from 1903 are limited to descriptions of flood damages and flood heights reported by residents of the basin. The flood of 1904 is the flood of record; however, it is believed that the flood of 1882 was somewhat larger. The serious flood of 1969 was the second largest flood of record. The 1969 flood originated in the headwaters of the basin and caused losses totalling about \$12.5 million in the Souris River basin, of which about \$10.9 million occurred at Minot. Without emergency measures, damages could have reached about \$19.3 million at Minot. During this flood, about 48,000 acres of farmland were inundated along with an estimated 510 acres of urban development at Minot. Also, 11,800 persons were evacuated from the valley. Had the proposed reservoir and channel improvement been constructed prior to the 1969 flood, all urban damages and most rural damages would have been averted.

*Recommended plan of improvement.*—The report recommends the construction of a single-purpose dam and reservoir for flood control just upstream from the Des Lacs River near the community of Burlington and a channel for controlling floods downstream from the dam and through the City of Minot to the community of Logan. The plan of improvement includes a proposal to regulate future flood plain land use within the area subject to inundation by the 100-year flood under proposed conditions. The reservoir would be of 637,000 acre-feet capacity for flood control and includes the development of certain marshlands to mitigate losses of waterfowl and possible damages to wildlife habitat attributable to periodic reservoir inundation. The channel portion of the project has been authorized under authority of Section 201 of the Flood Control Act of 1965 and would consist of that 37.0 mile reach of the Souris River from Burlington through Minot to Logan. This channel, together with the Burlington Dam, would provide Minot protection from floods which could be expected to occur on the average of once every 100 years. The channel improvement would not be effective in eliminating flood damages without the development of the dam and reservoir. The proposed plan would not affect any interests in Canada.

*Estimated cost (price level of June 1969)*

Federal .....	\$29, 240, 000
Non-Federal .....	—
Total .....	29, 240, 000

PROJECT ECONOMICS

[Interest rate of 5½ percent]

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$1, 613, 600	.....	\$1, 613, 600
Maintenance, operation, and replacement .....	88, 000	.....	88, 000
Total .....	1, 701, 600	.....	1, 701, 600
Annual benefits: Flood control .....	.....	.....	2, 192, 100

*Benefit-cost ratio.*—1.3.

*Local cooperation.*—Prescribe and enforce regulations to prevent encroachment on downstream channel capacities for regulation of the reservoirs; at least annually inform affected interests that the project will not provide complete flood protection; provide guidance and leadership in preventing unwise future development of flood plain by use of appropriate flood plain management techniques to reduce flood losses; and hold and save the United States free from damages due to water rights claims resulting from construction and operation of the project. Local interests have indicated their willingness to meet the requirements of local cooperation.

*Comments of the State and Federal agencies.*—

Department of the Interior: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of North Dakota: Favorable.

*Comments of Office of Management and Budget.*—No objection to the submission of the report to the Congress. The Office sees no justification for mitigation of recreational facilities at the Renville County Park. The Office believes that the "nature access" facilities are subject to the provisions of the Federal Water Project Recreation Act, P. L. 89-72.

*Comments of the Secretary of the Army.*—The Secretary of the Army and the Chief of Engineers concur with the Office of Management and Budget.

*Remarks.*—This project is essential to provide adequate flood protection; had the proposed reservoir been constructed prior to the devastating flood of 1969, all urban damages and most rural damages would have been averted.

#### MISSISSIPPI RIVER AT DAVENPORT, IOWA

(H. Doc. 91—)

*Location.*—The Mississippi River rises in the vicinity of Lake Itasca in central Minnesota and flows in a general southerly direction for about 2,470 miles to the Gulf of Mexico. Davenport, Iowa is part of the Quad-Cities metropolitan area located along the Mississippi River.

*Authority.*—Resolutions of the House Committee on Public Works adopted 18 September 1944 and Section 208 of the 1965 Flood Control Act.

*Existing project.*—There are no existing Federal flood control projects in the problem area.

*Flood problem.*—Areas subject to flooding are occupied by residential, commercial, industrial, and transportation developments. Parks, schools, churches, and public utility buildings are also located in the flood plain. Inundation of these lands, resulting in flood damage to the affected properties, has been relatively frequent. The highest flood of record and also the most damaging occurred in 1965.

*Recommended plan of improvement.*—A system of levees and floodwalls, about 5.9 miles long, with appurtenant works including interior drainage facilities, railroad and road closure structures, a railroad

raise, miscellaneous other relocations, and beautification and recreational features constitutes the plan of protection against the Mississippi River. A reservoir on Blackhawk Creek would protect part of the downstream end of Davenport from floods on that creek and would provide recreational opportunities.

ESTIMATED COST  
[November 1969 price level]

	Federal	Non-Federal	Total
Total.....	\$12,262,500	\$3,058,500	\$15,321,000
Levees and floodwalls.....	(10,300,000)	(1,720,000)	(12,020,000)
Reservoir.....	(1,962,500)	(1,338,500)	(3,301,000)

PROJECT ECONOMICS  
[Interest rate of 5½ percent]

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization.....	\$663,300	\$207,200	\$870,500
Maintenance.....		67,700	67,700
Total.....	663,300	274,900	938,200
Annual benefits:	Flood control	Recreation	Total
Annual benefits:			
Total.....	1,023,900	211,500	1,235,400
Levees and floodwalls.....	(706,000)	(53,000)	(759,000)
Reservoir.....	(317,900)	(158,500)	(476,400)

*Benefit-cost ratio.*—1.3

*Local cooperation.*—Local interests will be required to furnish all lands, easements, and rights-of-way necessary for construction of the projects, including borrow and ponding areas as applicable, hold and save the United States free from damages; maintain and operate the completed works; provide for modification of buildings, utilities, and roads; and modify and construct new sewers, except the parts of drainage structures that pass over or under the protective works; take measures to prevent encroachment on ponding areas and flood prevention structures, and share in the cost of recreational facilities. Local interests have indicated willingness to provide the requirements of local cooperation.

*Comments of the States and Federal agencies.*—

Department of Agriculture: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education and Welfare: Favorable.

Department of Transportation: Favorable.

*Remarks.*—Flooding has been relatively frequent and severe. The proposed works will provide needed flood control and recreational opportunities.

## ARCADIA RESERVOIR, DEEP FORK RIVER, OKLA.

(H. Doc. 91-299)

*Location.*—The proposed Arcadia Dam and Reservoir is located on the upper reach of the Deep Fork River in central Oklahoma. The Deep Fork River Basin has a drainage area of 2,500 square miles.

*Authority.*—Several Congressional resolutions and a River and Harbor Act adopted or approved during the period 1945 to 1960.

*Existing project.*—There are no existing Federal flood control projects in the Deep Fork River Basin. During the period 1910 to 1923, local interests constructed channel improvements in the upper reaches to control minor flooding. At the present time, the Soil Conservation Service has an active program for watershed protection and flood prevention in the basin.

*Flood problem.*—Major floods occur on an average of once in 5 years and minor floods occur on an average of twice yearly. These floods cause damages of about \$791,000 annually. Additional projected urban and rural developments in the flood plain will cause an increase in the damages. Conservation of water is needed for municipal and industrial purposes, and there is a need for improving the quality of stream flows in Deep Fork River. Development of water-oriented recreation facilities and fish and wildlife resource conservation is needed in the area.

*Recommended plan of improvement.*—Construction of a multiple-purpose reservoir in the headwaters of the Deep Fork River in the vicinity of Arcadia, Oklahoma. The proposed reservoir would have a total storage capacity of 73,200 acre-feet, of which 31,100 acre-feet would be assigned to flood control and sediment reserve, and 42,100 acre-feet assigned to conservation storage. The dam would be an earth-fill structure about 72 feet high.

*Estimated cost (price level of January 1968)*

Federal .....	<sup>1</sup> \$24, 900, 000
Non-Federal .....	
Total .....	<sup>1</sup> 24, 900, 000

<sup>1</sup> Includes non-Federal reimbursements of \$2,038,000 for water supply storage and \$455,000 for recreation facilities.

## PROJECT ECONOMICS

(Interest rate of 5½ percent)

	Federal	Non-Federal	Total
<b>Annual charges:</b>			
Interest and amortization .....	\$1, 414, 100		\$1, 414, 100
Maintenance, operation, and replacement .....	94, 200	\$49, 700	143, 900
Total .....	1, 508, 300	49, 700	1, 558, 000
<b>Annual benefits:</b>			
Flood damages prevented .....			230, 000
Water supply .....			222, 000
Water quality control .....			1, 158, 000
Recreation .....			411, 000
Area redevelopment .....			208, 000
Total .....			2, 229, 000



*Benefit-cost ratio.—1.4.*

*Local cooperation.*—Pay the construction costs and the annual maintenance, operation and replacement costs allocated to water supply, presently estimated at \$2,038,000 and \$6,800 respectively; administer land and water areas for recreation, repay one-half of the separable first cost assigned to recreation, presently estimated at \$455,000 and bear all costs of annual operation, maintenance, and replacements incurred therefor; hold and save free from water rights claims; preserve yields of the stream at and below Arcadia Reservoir required for water quality control; and agree to publicize flood plain information in the area concerned and to provide this information to zoning and other regulatory agencies and public information media for their guidance and appropriate action including adoption of such regulations as may be necessary to insure compatibility between future developments and protection levels provided by the project. Local interests have indicated their willingness to meet the requirements of local cooperation.

*Comments of the State and Federal agencies.—*

Department of the Interior: Favorable.  
 Department of Agriculture: Favorable.  
 Department of Commerce: Favorable.  
 Department of Health, Education, and Welfare: Favorable.  
 Federal Power Commission: Favorable.  
 Department of Transportation: Favorable.  
 State of Oklahoma: Favorable.

*Comments of the Bureau of the Budget.*—The Bureau of the Budget recommends that the water quality aspects be re-examined during preconstruction planning to determine the most economical combination of advance waste treatment, water diversion and stream flow regulation. Also, the Bureau stated that evaluation of the benefits of low flow augmentation should be reconsidered in light of the conclusions of the pending water quality study by the Water Resources Council. Subject to consideration of its views, the Bureau of the Budget has no objection to submission of the report to Congress.

*Comments of the Secretary of the Army.*—In accordance with the recommendations of the Bureau of the Budget the water quality aspects will be re-examined during the preconstruction planning stage.

*Remarks.*—The project is an important element in the overall development of water resources in central Oklahoma. It will reduce flood damages and provide conservation storage for water supply, water quality, and recreational uses.

ARKANSAS-RED RIVER BASINS WATER QUALITY CONTROL STUDY,  
 TEXAS, OKLAHOMA, AND KANSAS (PART II)

(S. Doc. 91- )

*Locationn.*—The Arkansas and Red Rivers drain 252,000 square miles—approximately one-twelfth of the Nation's land area—including all of Oklahoma and parts of Colorado, New Mexico, Kansas, Texas, Missouri, Arkansas, and Louisiana. The principal surface features of the two basins consist of high mountains in the west, and a large area of low mountains which rise abruptly from the Coastal and Mississippi alluvial plains sloping gradually from west to east, broken

locally by escarpments, hills, and relics of old eroded mountains. Rivers with sources in areas of steep slopes change from swiftly flowing to slow and sluggish streams meandering through wide alluvial valleys. During extended droughts, only the major rivers in the western half of the basins maintain continuous flows; in the humid eastern section, recurring floods frequently spread water over wide expanses of adjacent lowlands.

*Authority.*—Resolution of the Senate Public Works Committee, adopted 16 December 1959.

*Existing project.*—A total of 85 reservoirs, existing and authorized, provide flood control and conservation storage in the Arkansas and Red River basins. The majority of these reservoirs are located in the eastern portion of Kansas, Oklahoma, and Texas, and in Arkansas and Louisiana, the eastern one-half of the two basins. The major existing projects concerned with this study are Great Salt Plains Reservoir, on the Salt Fork of the Arkansas River, Keystone Reservoir, on the main stem of the Arkansas near Tulsa, and Denison Reservoir (Lake Texoma) on the Red River near Denison, Texas, north of Dallas.

*Problem.*—Preliminary investigations by the Public Health Service revealed that 15 significant sources of natural chloride pollution in Texas, Oklahoma, and Kansas, are the primary cause of water degradation by minerals. In addition, man-made brines enter the basins' waters, largely from petroleum and natural gas production. Chlorides radiation by minerals. In addition, man-made brines enter the basins, making them unusable for most municipal, industrial, and agricultural purposes. On an average, 20,000 tons of salt are carried each day by the Arkansas River past Van Buren, Arkansas, and 7,000 tons daily by the Red River past Index, Arkansas. Approximately 15,000 tons of the salt come daily from 15 natural sources, while the remaining 12,000 tons are from man-made pollution and other minor natural source areas. To date, the main emphasis of water quality improvement and maintenance programs has been toward controlling man-made pollution. Waters for considerable distances on these streams are limited in use because of the far-reaching effects of natural brine emission. The improvement and preservation of the water quality in these basins is essential for full utilization of the surface water supply. There is an immediate need for additional good quality water in and to the west of the areas of natural salt pollution and a large potential need downstream from these areas in the eastern portion of the basins. Natural salt pollution in the Arkansas River basin begins in southern Kansas and western Oklahoma. Five major natural contamination sources, designated as Areas I, II–III, IV and XII, account for about 70 percent of the total load carried past Tulsa, Oklahoma, each year. Area I (Great Salt Plains) on the Salt Fork of the Arkansas and Areas II–III (Big and Little Salt Plains) on the Cimarron River contribute 3,600,000 of the total natural salt load of 4,000,000 tons per year. The Red River basin is presently polluted with chlorides from the Palo Duro Canyon in western Texas to its confluence with the Mississippi River. A large portion of the pollution originates from 10 natural salt sources (Areas V, VI, VII, VIII, IX, X, XI, XIII, XIV and XV) along the upper tributaries to the Red River in Texas and

Oklahoma. At Lake Texoma (Denison Dam) the total salt load passing in one year is about 2.3 million tons.

*Recommended plan of improvement.*—Construction and operation of the Red River Chloride Control Project, Oklahoma and Texas, for the control of natural chloride pollution in the Red River basin, consisting of four subsurface brine collection systems with attendant pumping facilities: one system each on Elm Fork (Area VI), North and Middle Pease Rivers (Area IX), Jonah Creek (Area XIII), and Salt Creek (Area XIV); and four brine reservoirs: each one on Fish Creek (Area VI), Canal Creek (Area IX), Dry Salt Creek (Areas XIII–XIV), and the Little Red River (Area XV). The Red River project would supplement the Wichita River Project, Texas (Areas VII, VIII and X) recommended in the Part I report. Construction and operation of the Arkansas Chloride Control Project, Oklahoma and Kansas, for control of natural chloride pollution in the Arkansas River basin, consisting of three fresh water reservoirs with outlet diversion channels: one on the Salt Fork (Area I) and two on the Cimarron River (Areas II–III); and three brine reservoirs: one, a modification of the existing Great Salt Plains Reservoir (Area I), one on the Cimarron River (Areas II–III), and one on Salt Creek (Area IV). In addition, a joint study would be made with the State of Kansas to assess the impact of the fresh water diversion dam located on the Cimarron River in the vicinity of the Kansas-Oklahoma state line as a basis for determining whether specific compensation, because of significant adverse effects, is warranted.

#### ESTIMATED COST (PRICE LEVEL OF JANUARY 1966)

	Arkansas River	Red River	Total
Federal.....	\$177,500,000	\$55,680,000	\$233,180,000
Non-Federal.....	(1)		(1)
Total.....	177,500,000	55,680,000	233,180,000

Local interests to repay \$340,000 for recreation and fish and wildlife.

#### PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Red River	Arkansas River
Annual charges:		
Interest and amortization.....	\$3,199,100	\$10,063,500
Maintenance, operation, replacement, and engineering studies.....	320,500	1179,000
Total.....	3,519,600	10,242,600

<sup>1</sup> Includes \$41,000 non-Federal operation, maintenance, and replacement of recreation facilities.

#### ANNUAL BENEFITS

	Red River	Arkansas River
Quality improvement.....	\$8,260,600	\$9,768,900
Damages prevented.....	4,000	630,400
Recreation.....		407,000
Fish and wildlife.....		7,000
Land rentals.....		77,000
Total.....	8,264,600	10,890,300

*Benefit-cost ratio.—*

Red River, 2.3.

Arkansas River, 1.1.

*Local cooperation.*—Continue and strengthen efforts to reduce salt pollution from oil fields and other mining and industrial operations; hold and save free from damages due to water-rights claims and construction and operation of the project works; administer project lands and water areas for recreation and fish and wildlife enhancement; repay one-half of the separable cost of the reservoir projects allocated to recreation and fish and wildlife enhancement, currently estimated at \$250,000 and \$90,000 for Area I and Areas II–III, respectively; bear all costs of operation, maintenance, and replacement of recreation and fish and wildlife lands and facilities, currently estimated, on an average annual basis, at \$30,000 and \$11,000, for Area I, and Areas II–III, respectively. Local interests have indicated willingness to provide requirements of local cooperation.

*Comments of the States and Federal agencies.—*

*Department of the Interior.*—The Fish and Wildlife Service called attention to damages which the recommended plan would cause to the existing Salt Plains National Wildlife Refuge. The Department urged inclusion of certain measures to mitigate these damages in the plan recommended by the Corps. The plan of improvement recommended by the Chief of Engineers has been modified to include those measures consisting of a refugee protection dike, an outlet channel for drainage, provisions to continue supplying the refuge area with fresh water, and acquisition of 1,100 acres of land for refugee purposes.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

State of Texas: Favorable.

State of Oklahoma: Favorable.

State of Louisiana: Favorable.

State of Arkansas: Favorable.

State of Kansas: The Governor of Kansas commented only with regard to that portion of plan affecting the State of Kansas and made three recommendations relating to the fresh water diversion dam on the Cimarron River in the vicinity of the Kansas-Oklahoma state line. The recommendations include a procedure for analysis of alternative designs to reduce the amount of land acquired in Kansas, a means of off-setting any losses to local governmental units and to the local economy, and a procedure for making any resulting fresh water impoundment usable for recreation. The Chief of Engineers recommends that these matters be examined in detail in the advanced engineering phase with appropriate modifications of design adopted at that time. Also, a joint study with the State of Kansas to assess the impact of the fresh water diversion dam on the local economy, to serve as a basis for determining whether specific compensation is warranted, is recommended by the Chief of Engineers.

Red River compact: Favorable.

*Remarks.*—The project will provide means for reducing natural chloride pollution in the Arkansas and Red Rivers. Improvement and preservation of the water quality in these basins is essential for full



utilization of the surface water supply. The present authorization of funds for Part I contained in the Flood Control Act of 1966 is to be utilized for initiation and partial accomplishment of both Parts I and II, thus requiring no additional monetary authorization at this time.

## SABINE RIVER BASIN, TEX. AND LA.

(H. Doc. 91- )

*Location.*—The Sabine River Basin includes all or portions of 20 countries in eastern Texas and seven parishes in western Louisiana. The Sabine River and its tributaries drain an area of 9,756 square miles, of which 7,426 square miles are in Texas and 2,330 square miles in Louisiana. The river rises in Collin and Hunt Counties, Texas, about 35 miles northeast of Dallas and flows southeasterly about 310 miles to the Texas-Louisiana stateline, then southerly along the stateline for about 265 miles to the head of Sabine Lake near Orange, Texas.

*Authority.*—The report is in response to resolutions of the Committee on Flood Control, United States House of Representatives, adopted 20 March 1945, and the Committee on Public Works of the United States House of Representatives, adopted 3 June 1959.

*Existing projects.*—There are no major Federal flood control or multiple purpose reservoirs in the basin. Existing Federal navigation projects in the basin include the Gulf Intracoastal Waterway, the deep draft Sabine River channel to Orange, Texas and the Shallow draft channel in Adams and Cow Bayous. A PL 566 watershed projection and flood prevention project has been developed on the Upper Lake Fork Creek drainage. Non-Federal interests have constructed 11 reservoirs with individual storage capacities of more than 5,000 acre-feet and one group of 5 off-channel reservoirs having an aggregate storage of 7,550 acre-feet primarily for water supply. The Sabine River Authority of Texas has developed the Lake Tawakoni project for water supply and recreation and the Sabine River Authority of Texas and Louisiana has developed the Toledo Bend project for water supply, hydroelectric power and recreation.

*Problems.*—Frequent flooding occurs throughout the Sabine River basin with over 500,000 acres of land along the main stem and lower reaches of major tributaries subject to flooding. Local efforts to protect flood plain lands by construction of levees or channel straightening have been ineffective and costly since the improvements have been repeatedly overtopped, broken, or destroyed. Average annual flood damages on the main stem and major tributaries are estimated at approximately \$5.2 million. By the year 2020, municipal and industrial water supply requirements are projected to increase 9 times the 1960 use of 77.4 million gallons per day. Present water-oriented outdoor recreational demands on the basin are estimated at 7.5 million recreation-days, of which fishing accounts for about one-half of this total. By the year 1980 these demands are expected to double and by 2020 a nearly 5-fold increase can be expected.

*Recommended improvements.*—Construction is recommended for the Mineola, Lake Fork and Big Sandy multiple-purpose dam and reservoir projects for flood control, water supply and recreation; the local flood protection project at Greenville, Texas; and the commer-

cial barge navigation channel about 5.3 miles long from Echo to Morgan Bluff, Texas. The reservoir projects constitute a system that would meet immediately foreseeable and projected water supply needs in the basin and provide a surplus of about 200,000 acre-feet annually for export to the Dallas area. The reservoir projects and the Greenville local protection project will meet urgent flood control problems in the basin. The conservation pools formed by the reservoirs would provide opportunities for public water-oriented outdoor recreation.

*Estimated total construction cost (January 1970 prices)*

Project:	Federal Cost
Mineola Reservoir.....	<sup>1</sup> \$87,869,000
Lake Fork Reservoir.....	<sup>1</sup> 68,589,000
Big Sandy Reservoir.....	<sup>1</sup> 33,511,000
Greenville local protection.....	<sup>2</sup> 100,300
Navigation channel.....	<sup>3</sup> 1,765,200
Total .....	191,834,500

<sup>1</sup> Includes reimbursable non-Federal water supply and recreation costs listed in the following table.

<sup>2</sup> Excludes non-Federal costs for lands, easements, rights-of-way and relocations of \$80,700.

<sup>3</sup> Excludes non-Federal costs for lands, easements, rights-of-way and alterations of \$287,800.

REIMBURSABLE COSTS

Project	Water supply	Recreation	Total
Mineola Reservoir.....	\$29,224,000	\$4,454,000	\$33,678,000
Lake Fork Reservoir.....	33,679,000	2,045,000	35,724,000
Big Sandy Reservoir.....	13,908,000	2,923,000	16,831,000
Total.....	76,211,000	9,422,000	85,633,000

*Project Economics.—*

*Mineola (4 $\frac{7}{8}$  percent, 100 years)*

Annual charges:	
Interest and Amortization.....	\$4,201,200
O, M & R <sup>1</sup> .....	676,000
Total .....	4,877,200

<sup>1</sup> Includes non-Federal O, M & R costs of \$155,200 annually for water supply and \$429,000 annually for recreation and fish and wildlife.

Annual benefits:	
Flood control .....	\$2,105,000
Water supply .....	2,961,400
Recreation and fish and wildlife.....	1,229,400
Redevelopment .....	75,100
Total .....	6,370,900

*Lake Fork (4 $\frac{7}{8}$  percent, 100 years)*

Annual charges:	
Interest and Amortization.....	\$3,135,600
O, M & R <sup>1</sup> .....	463,400
Total .....	3,599,000

Annual benefits:	
Flood control .....	\$1,405,500
Water supply .....	3,949,100
Recreation and fish and wildlife.....	792,200
Redevelopment .....	57,700
Total .....	6,204,500

<sup>1</sup> Includes non-Federal O, M & R costs of \$115,700 annually for water supply and \$226,400 annually for recreation and fish and wildlife.

*Big Sandy (47½ percent, 100 years)*

Annual charges:	
Interest and amortization.....	\$1,473,700
Operations, maintenance, and research <sup>1</sup> .....	454,700
Total.....	1,928,400
Annual benefits:	
Flood control .....	\$425,700
Water supply .....	1,766,700
Recreation and fish and wildlife.....	793,200
Redevelopment .....	30,800
Total.....	3,016,400

<sup>1</sup> Includes non-Federal operations, maintenance, and research costs of \$144,600 annually for water supply and \$274,700 annually for recreation and fish and wildlife.

*Greenville local protection (47½ percent, 100 years)*

Annual charges:	
Interest and amortization.....	\$9,700
Operations, maintenance, and research <sup>1</sup> .....	2,100
Total.....	11,800
Annual benefits: Flood control.....	\$13,000

<sup>1</sup> Operations, maintenance, and research costs are non-Federal.

*Navigation channel (47½ percent, 50 years)*

Annual charges:	
Interest and amortization.....	\$110,200
Operations, maintenance and research <sup>1</sup> .....	59,800
Total.....	170,000
Annual benefits: Transportation savings.....	\$616,000

<sup>1</sup> Includes non-Federal operations, maintenance, and research costs of \$28,800 annually.

*Benefit-cost ratios: (5½%)*

Mineola Reservoir.....	1.3
Lake Fork Reservoir.....	1.7
Big Sandy Reservoir.....	1.6
Greenville local protect .....	1.1
Navigation channel .....	3.7

*Local cooperation*

*Reservoir projects.*—Repay all costs allocated to water supply in accordance with the Water Supply Act of 1958, such costs presently estimated at \$76,211,000 for construction and \$415,500 for operation and maintenance; obtain without cost to the United States all water rights necessary for operation of the project for water supply; and in accordance with the Federal Water Project Recreation Act, administer project land and water areas for recreation and fish and wildlife enhancement; pay, contribute in kind or repay (which may be through

user fees) with interest, one-half of the separable construction cost of the projects allocated to recreation and fish and wildlife enhancement, presently estimated at \$9,422,000 and bear all costs of operation, maintenance and replacement of recreation and fish and wildlife facilities presently estimated at \$930,100 annually.

*Greenville local protection project.*—Provide without cost to the United States all lands, easements, rights-of-way and necessary relocations and alterations; provide assurances that encroachment on improved channels and floodways will not be permitted; hold and save; maintain and operate the project; adopt such regulations or disseminate basic flood information as may be necessary to insure compatibility between development and protection levels; and inform affected interests, at least annually, that the project will not provide complete protection.

*Navigation channel, Echo to Morgan Bluff.*—Provide lands, easements, rights-of-way, aids to navigation, and suitable areas for spoil disposal including necessary dikes, bulkheads, and embankments or the cost of such retaining works required for disposal of spoil; hold and save; provide and maintain adequate public terminal facilities open to all on equal terms and depths in berthing areas and access channels commensurate with project depths; accomplish without cost to the United States alterations of utilities and their maintenance as required for construction of the project; provide proportionate share of costs of bridge alterations over existing channels in accordance with Section 6 of the Bridge Alterations Act; assume all obligations of owning, maintaining and operating all highway and railway bridges altered or constructed as part of the project; prohibit erection of any structure within 75 feet of the channels or turning basin; establish regulations prohibiting discharge of pollutants into the waters of the improved channels; and contribute annually, until such time as multiple use of the channel occurs, 50 percent of the annual charge for interest and amortization of the Federal investment, such share presently estimated at \$47,400 annually. Responsible interests have provided adequate assurances.

*Comments of States and Federal agencies.*—

State of Texas: Favorable.

State of Louisiana: Generally favorable.

Department of Transportation: Favorable.

Department of HUD: Favorable.

Department of Agriculture: Generally favorable.

Department of Interior: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Commerce: Favorable.

Federal Power Commission: Favorable.

Water Resources Council: Favorable.

*Remarks.*—The reservoir projects will solve urgent flood control problems; meet immediately foreseeable water supply needs; and provide recreational opportunities. The local protection project will solve an urgent flood problem at Greenville, Texas. The commercial barge navigation project will encourage utilization of available natural resources and provide savings in transportation costs.



## GOLETA, CALIF., AND VICINITY

(H. Doc. 91-392)

*Location.*—Atascadero Creek and its tributaries drain an area of about 48 square miles in Santa Barbara County, California, and discharges into the Pacific Ocean at Goleta which is located to the west of the City of Santa Barbara.

*Authority.*—Section 209 of the Flood Control Act of 1962, approved October 23, 1962.

*Existing project.*—Local interests have constructed some partial-protection works. There is no existing Federal project at Goleta.

*Flood problem.*—Because of inadequate channel capacities, large flood flows cover most of the relatively flat coastal plain in the Goleta area. The flood damage potential has increased greatly with the urban development that is taking place.

*Recommended plan of improvements.*—Provides for 12.5 miles of channel improvement and about 2.0 miles of earth levee along Atascadero Creek and its tributaries.

*Estimated cost (price level of August 1968)*

Federal .....	<sup>1</sup> \$13, 830, 000
Non-Federal .....	3, 540, 000
<b>Total .....</b>	<b>17, 370, 000</b>

<sup>1</sup> Includes \$455,000 to be repaid by local interests for land enhancement.

PROJECT ECONOMICS  
(INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
<b>Annual charges:</b>			
Interest and amortization .....	\$712, 000	\$202, 000	\$914, 000
Maintenance and operation .....	0	116, 000	116, 000
<b>Total .....</b>	<b>712, 000</b>	<b>318, 000</b>	<b>1, 030, 00</b>
<b>Annual benefits:</b>			
Damages prevented .....			\$1, 000, 000
Land enhancement .....			109, 000
<b>Total .....</b>			<b>1, 109, 000</b>

*Benefit-cost ratio.*—1.1.

*Local cooperation.*—Provide lands, easements and rights-of-way; perform all necessary modification or relocation of highways, roads, streets; highway bridges, utilities, irrigation and drainage facilities; contribute 15.0 percent toward the cost of construction on Atascadero and Maria Ygnacio Creeks upstream from the mouth of San Pedro Creek, an amount presently estimated to be \$455,000 for land enhancement which sum may be repaid over 15 years; maintain and operate the works after completion; hold and save the United States free from damages due to construction of the works and from damages arising from any water-rights claims; prevent any obstruction or encroachment on improved channels, upstream natural channels, and levees that would reduce their flood-carrying capacities; pay for all

increased construction costs that would result from topographical changes to the existing Tecolotito Creek within the property boundaries of the City of Santa Barbara. Local interests have indicated a willingness to meet the requirements of local cooperation.

*Comments of the States and Federal agencies.*—

State of California: Favorable.

Department of the Interior: Favorable.

Department of Agriculture: Favorable.

Department of Transportation: Favorable.

Department of Health, Education, and Welfare: Favorable.

*Comments of Office Management and Budget.*—No objection.

*Remarks.*—The proposed improvements will protect the flat coastal plain against frequent and damaging floods. It is noted that the project will be coordinated and made compatible with local plans for Goleta Slough.

#### MERCED COUNTY STREAMS, CALIFORNIA

(H. Doc. 91 )

*Location.*—The drainage area of Merced County Streams covered by this report represents about 1,000 square miles of San Joaquin Valley in California. Nearly 700 square miles of foothills and mountains are in Mariposa County and approximately 300 square miles of flood plain are within Merced County.

*Authority.*—House Committee on Public Works resolution adopted 1 July 1958.

*Existing project.*—The existing Federal flood control project on Merced County Streams was completed in 1957. The works consist of four reservoirs for flood detention—(Burns Creek, Bear Creek, Owens Creek, and Mariposa Creek); two diversion channels; and channel improvements. In addition limited flood protection has been provided for Castle Air Force Base and the Merced National Wildlife Refuge. The State of California has constructed the Eastside By-Pass of the San Joaquin River Flood Control Project. This improvement includes the lower portion of Bear and Owens Creek which are tributary to the San Joaquin River.

*Flood problems.*—The existing flood control project in Merced County does not provide an adequate degree of protection, under present conditions, to the rapidly growing urban-suburban area in and around the City of Merced. Pasture lands which formerly were low value damage areas have been converted to a higher type of agricultural useage. In addition long duration reservoir releases, to evacuate storage from the detention reservoirs, appears to have a detrimental effect on downstream lands.

*Recommended project.*—The plan of improvement provides for 3 new reservoirs; enlarging 4 existing reservoirs; and 52.1 miles of channel and levee improvements in the lower reaches of Bear Creek, Black Rascal Creek, Mariposa Creek and Deadman Creek.

## ESTIMATED COST (JULY 1969 PRICE LEVEL)

Initial cost	Federal	Non-Federal	Total
Construction.....	<sup>1</sup> \$37,260,000		<sup>1</sup> \$37,260,000
Lands, easement and rights-of-ways.....		\$2,450,000	2,450,000
Total.....	37,260,000	2,450,000	39,710,000

<sup>1</sup> Includes \$9,195,000 reimbursable by local interests, of which \$6,500,000 is according to provisions of the Recreation Act of 1965 and \$2,695,000 is according to the reclamation law.

## PROJECT ECONOMICS (INTEREST RATE 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization.....	\$1,324,000	\$325,000	\$1,949,000
Maintenance and operation.....	129,000	<sup>1</sup> 282,000	411,000
Total.....	1,453,000	970,000	2,360,000

<sup>1</sup> Consists of \$64,000 for flood control, \$204,000 for recreation, and \$14,000 for irrigation.

Annual benefits:	
Damages prevented.....	\$2,227,000
Recreation.....	1,270,000
Irrigation.....	153,000
Area redevelopment.....	390,000
Total.....	4,040,000

*Benefit-cost ratio.*—1.7.

*Local cooperation.*—Local interests have indicated a willingness to meet the following requirements of local cooperation.

*Levees and channels.*—Provide all lands, easements, and rights-of-way; hold and save the United States free from damages due to construction of the works; maintain and operate the works after completion; accomplish all relocations of buildings, utilities, bridges and any other alterations which may be required for construction of the projects; plus prevent encroachment on channels and preserve, at 1968 capacities, the flood channels within the project area which are not improved by the proposed project. The local interests would be required to provide the necessary lands, easements, rights-of-way and relocations which are estimated to cost \$2,450,000 and in addition to assume responsibility for operation and maintaining the proposed works after construction at an estimated annual cost of \$64,000.

*Reservoirs.*—Assume annual OM & R costs estimated to be \$218,000, repay according to provision of Recreation Act of 1965, an estimated \$4,615,000 for initial construction costs allocated to recreation and fish and wildlife enhancement; and an estimated \$1,885,000 for their share of construction of future recreation facilities when needed. In addition, local interests would be required, under the Reclamation Law, to pay that part of construction costs allocated to irrigation which are presently estimated to be \$2,695,000. The Merced County irrigation district will continue to divert up to 1,000 cfs of the flood flows of Fahrens Creek into Yosemite Lake. Local interests will settle all claims for water rights pertaining to establishment and use of the permanent pool for recreation purposes.

*Comments of the State and Federal agencies.—*

Department of the Interior: Favorable.

Department of Agriculture: Favorable.

Department of Health, Education, and Welfare: Favorable.

Department of Transportation: Favorable.

State of California: Favorable.

*Remarks.*—The proposed plan of reservoirs, levees and channel improvements will provide needed flood protection as well as recreational facilities and supplemental irrigation water supply.

## COTTONWOOD CREEK, CALIF.

(H. Doc. 91- )

*Location.*—Cottonwood Creek is located on the west side of the upper Sacramento River Valley in northern California.

*Authority.*—Flood Control Act of 1962.

*Existing project.*—Existing Federal improvements include the Sacramento River Flood Control Project, constructed by the Corps of Engineers, consisting of a comprehensive system of levees, overflow weirs and bypasses. Related projects constructed by the Bureau of Reclamation are units of the Central Valley Project, of which the Shasta Dam is the principal feature. Local interests have constructed levees which are substandard, intermittent, and for the most part ineffective against large floodflows.

*Flood problems.*—Floodflows cause flood damages and erosion to the lower reaches of Cottonwood Creek and contribute to damages to commercial and residential properties, agriculture, and public utilities in downstream areas along the Sacramento River. There is also a need for municipal and industrial water and irrigation water.

*Recommended project.*—Provides for construction of multiple-purpose reservoirs at the Dutch Gulch and Tehama sites on Cottonwood Creek for flood control, irrigation, municipal water supply, recreation, and fish and wildlife enhancement.

*Estimated cost (price level of July 1970)*

Federal .....	<sup>1</sup> \$174, 000, 000
Non-Federal .....	0
Total .....	174, 000, 000

<sup>1</sup> Includes \$120,574,000 allocated to water supply, \$5,209,000 allocated to irrigation, and \$3,771,000 allocated to recreation and fish and wildlife enforcement reimbursable by local interests.

## PROJECT ECONOMICS (INTEREST RATE OF 5½ PERCENT)

	Federal	Non-Federal	Total
Annual charges:			
Interest and amortization .....	\$9,706, 000	0	\$9,706, 000
Operation and maintenance .....	<sup>1</sup> 293, 000	<sup>2</sup> \$66, 000	359, 000
Total .....	9, 999, 000	66, 000	10, 065, 000

<sup>1</sup> Includes \$201,000 and \$4,000 to be repaid by local interests for water supply and irrigation, respectively.

<sup>2</sup> For recreation and fish and wildlife facilities which would be a non-Federal responsibility.



	<i>Annual benefits</i>
Flood damage reduction-----	\$2,000,000
Water supply-----	8,401,000
Irrigation-----	312,000
Recreation-----	315,000
Fish and wildlife enhancement-----	490,000
Area redevelopment-----	1,244,000
Total-----	12,762,000

*Benefit-cost ratio.*—1.3.

*Local cooperation.*—Prior to construction furnish assurances they will repay under the provisions of the Water Supply Act of 1958 the construction cost and annual operation and maintenance cost allocated to municipal and industrial water supply, presently estimated at \$120,574,000 and \$201,000 respectively; repay under the provisions of Reclamation Law the construction cost and annual operation and maintenance cost allocated to irrigation, presently estimated at \$5,209,000 and \$4,000 respectively; repay under the provisions of the Federal Water Project Recreation Act of 1965 one-half of the separable cost of the recreation and fish and wildlife enhancement features, presently estimated at \$3,771,000, and assume responsibility for administration, operation and maintenance of the recreation and fish and wildlife facilities; preserve or restore and maintain prevailing channel capacities downstream of the reservoirs; and adjust all claims concerning water rights arising from the construction and operation of the improvements. Local interests have indicated willingness to meet the requirements of local cooperation.

*Comments of the State and Federal agencies.*—

Department of Health, Education and Welfare: Favorable.  
State of California: Favorable.

*Remarks.*—The proposed project will reduce flood damages and in addition, will provide recreation facilities and municipal, industrial and irrigation water supply for local use as well as export.

#### PORTUGUESE AND BUCANA RIVERS, PUERTO RICO

(H. Doc. 91-422)

*Location.*—Portuguese and Bucana Rivers originate on the central ridge of the island of Puerto Rico and flow south from this point to the Caribbean Sea near Ponce.

*Authority.*—Flood control Act of 18 August 1941 (Public Law 228, 77th Congress, First Session), Section 4.

*Existing project.*—There are no existing or authorized flood control projects in the study area or in the remainder of the island. However, there is a navigation project for Ponce Harbor, authorized by the River and Harbor Act of March 1945 and prior Acts.

*Flood problem.*—An urgent need exists for protection to Ponce from flooding of Portuguese and Bucana Rivers. Property damage in Ponce has been extremely heavy and several lives have been lost in past floods. In addition, the water-supply demand to meet the growing urban needs is continually increasing and the problem of finding an adequate and dependable source is becoming acute.

*Recommended plan of improvement.*—The District and Division Engineers recommend construction of two multiple-purpose reservoirs for flood control, water supply, and recreation; diversion of Portugues River to Bucana River, and channel improvements on both rivers through Ponce.

*Estimated cost (price level of December 1969)*

Federal .....	<sup>1</sup> \$41,756,000
Non-Federal .....	8,144,000
Total .....	49,900,000

<sup>1</sup> Includes \$10,145,000 Federal first costs reimbursable under provisions of Recreation and Water Supply Acts. The net cost to the Federal Government would be an estimated \$31,611,000.

	Federal	Non-Federal	Total
Reservoirs:			
Portugues.....	\$11,110,000	\$1,206,000	\$12,316,000
Cerrillos.....	16,351,000	1,660,000	18,011,000
Local protection: Channel improvement.....	14,295,000	5,278,000	19,573,000
Total.....	41,756,000	8,144,000	49,900,000

PROJECT ECONOMICS

[Interest rate of 5½ percent]

	Federal	Non-Federal	Total
Annual charges:			
Reservoirs:			
Interest and amortization.....	\$947,000	\$747,000	\$1,694,000
Maintenance, operation, and replacement.....	16,000	293,000	309,000
Total.....	963,000	1,040,000	2,003,000
Local protection works:			
Interest and amortization.....	759,000	293,000	1,052,000
Maintenance, operations, and replacement.....		49,000	49,000
Total.....	759,000	342,000	1,101,000
Total project:			
Interest and amortization.....	1,706,000	1,040,000	2,746,000
Maintenance, operation, and replacement.....	16,000	342,000	358,000
Total.....	1,722,000	1,382,000	3,104,000
Annual benefits:			
Reservoirs:			
Flood control.....			1,672,000
Increased land utilization.....			1,431,000
Water supply.....			791,000
Recreation and fish and wildlife enhancement.....			485,000
Local protection works:			
Flood control.....			1,262,000
Increased land utilization.....			1,080,000
Area redevelopment.....			161,000
Total.....			6,882,000

*Benefit-cost ratios*

Reservoirs:	
Portugues .....	2.1
Cerrillos .....	2.3
Local protection works: Channel improvements.....	2.1
Total project.....	2.2

*Flood control.*—For the channel improvements and diversion channel local interests are required to furnish the usual a,b,c's. Also, they are required to provide guidance and leadership in the prudent and economical future development of the flood plain areas, prohibit discharge of inadequately treated sewage and other pollutants into the channels and reservoirs, and prevent future encroachment which might interfere with the capability of the channels. For the reservoirs local interests are also required to furnish the a,b,c's.

*Water supply.*—Local interests would pay the construction costs and the annual maintenance, operation, and replacement costs allocated to water supply in accordance with the Water Supply Act of 1958, as amended, presently estimated at \$9,426,000 and \$14,800 respectively.

*Recreation and fish and wildlife.*—Local cooperation is required in accordance with the Recreation Act (PL 89-72). The local share of the separable cost allocated to recreation and fish and wildlife enhancement is presently estimated at \$329,000 for the Portugues Reservoir and \$390,000 for the Cerrillos Reservoir.

*Other.*—Local interests are also required to indemnify the United States against water rights claims. Assurances were received on all items of local cooperation by letter from the Puerto Rico Department of Public Works on 19 May 1969.

*Comments of the Commonwealth and Federal agencies.*

Department of the Interior : Favorable.

Department of Agriculture : Favorable.

Department of Health, Education, and Welfare : Favorable.

Department of Transportation : Favorable.

Commonwealth of Puerto Rico : Favorable.

*Comments of the Office of Management and Budget.*—No objection.

*Comments of the Secretary of the Army.*—Favorable.

*Remarks.*—The recommended project will provide a high degree of flood protection to Ponce from flooding of Portugues and Bucana Rivers, provides for recreation and fish and wildlife enhancement, and a dependable future source of water supply.

#### SECTION 202

The Committee heard testimony in support of Crops of Engineers participation in the Model City project for Pikeville, Kentucky. The overall project involves excavation of a channel cutting across a bend in the Levisa Fork of the Big Sandy River, the relocation of highway and rail and related coal handling facilities in this cut, and the filling of the existing river channel with material excavated from the cut to provide land suitable for development for community purposes. This is a multiple-agency project supported by the Appalachian Regional Commission, the Department of Housing and Urban Development, the Commonwealth of Kentucky and the City of Pikeville. The estimated cost of this overall development is \$22 million, of which \$20 million would be financed from funds programmed by the Appalachian Regional Commission, the Commonwealth of Kentucky and the Department of Housing and Urban Development. Authority is granted for an additional \$2 million required to complete the financing of this joint project under the water resources development program of the Corps of Engineers.

## SECTION 203

The Colorado River Basin Project Act (PL 90-537) authorizes the Secretary of the Interior, after consultation with the affected States and appropriate Federal Agencies, to conduct full and complete reconnaissance investigations for the purpose of developing a general plan to meet the future water needs of Western United States. The Department of the Army has already implemented numerous water resources projects in the eleven States to be covered by this study and has many additional projects and programs either under construction or in varying stages of planning which must be integrated into this overall planning effort. Present authority available to the Department of the Army is not sufficient for participation in a study of this magnitude over such a wide area and extended period of time (7 years). It is essential that the Department of the Army, acting through the Chief of Engineers, participate to the fullest extent in the development of the water resources of Western United States. This section would authorize such participation.

## SECTION 204

This section authorizes the Secretary of the Army, acting through the Chief of Engineers, to cooperate with the Commonwealth of Puerto Rico in the preparation of comprehensive water resources plans directed toward development, utilization, and conservation of water and related resources of drainage basins and coastal areas in the Commonwealth, and to submit reports and recommendations to the Congress with respect to appropriate Federal participation in carrying out such plans. The studies undertaken will consider flood protection, use of flood plains, navigation, waste management, regional water supply, outdoor recreation, water quality, beach erosion control, and other measures for environmental enhancement. The study will make possible a comprehensive and cooperative approach to water resources development in the Commonwealth of Puerto Rico.

## SECTION 205

This section would extend until April 17, 1975, the date on which the project on the Red River of the North at East Grand Forks, Minnesota, would expire unless local interests furnish the required assurances of local cooperation.

The project at East Grand Forks, Minnesota, in the interest of flood control and allied purposes, was authorized by the Flood Control Acts approved June 30, 1948 and May 17, 1950, substantially in accordance with the recommendations of the Chief of Engineers contained in House Document 185, 81st Congress. The recommended plan required that local interests, prior to construction of the project, furnish assurances satisfactory to the Secretary of the Army that they will, among other things, furnish without cost to the United States all lands, easements, rights-of-way and spoil disposal areas necessary for the construction and subsequent maintenance of the proposed channel and levee improvements, when and as required; hold and save the United States free from damages due to the construction and subsequent maintenance of the works; maintain and operate the works after completion in accordance with regulations prescribed by the Secretary of the



Army; and make at their own expense all necessary changes to utilities, highways, and bridges, including approaches.

#### SECTION 206

This section modifies the previously authorized and constructed Reservoir project to provide for construction of an elevated road as an alternate access to the Wolf Creek Park Area above elevation four hundred and forty three feet above sea level. The construction of this alternate road will provide improved access to the park area and to other lands. Local interests will derive substantial additional benefits from this improvement.

#### SECTION 207

The project for the Mississippi River and tributaries has made an important contribution to the economic growth and development of the lower Mississippi Valley and of the Nation. Stabilization of the river banks is important to both flood protection of adjacent areas and navigation on the inland waterway system. In certain areas of the river downstream from Cairo, Illinois, extensive improvements, oriented to use of the river, have been constructed between the levees and the river. It is believed that the Chief of Engineers in determining the need for bank stabilization measures downstream from Cairo should consider the need for protecting levees and existing industrial facilities.

#### SECTION 208

This section amends existing beach erosion control authority to permit, within the discretion of the Chief of Engineers, application of a cost apportionment procedure that is generally similar to that now applied to hurricane flood protection projects.

At the present time, projects which serve the single purpose of protection of beach erosion are subject to different cost-sharing formulas determined by ownership and use which can vary the Federal contribution from 50 percent in the case of non-Federal, publicly owned land, to 70 percent for non-Federal, publicly owned land used as a park or conservation area.

The cost-sharing formula for hurricane and tidal flood protection, established by the projects authorized under the 1958 Flood Control Act, contemplates a Federal contribution of up to 70 percent of the project cost. In multiple-purpose beach erosion and hurricane and tidal flood protection projects the costs allocable to each purpose are apportioned on the basis of the formula established for each such project purpose.

The section permits a desirable flexibility in the statutory cost apportionment required for beach erosion benefits and permits a discretionary determination of the proper Federal share of project cost up to 70 percent in all hurricane and tidal flood protection projects having concomitant beach enhancement aspects.

#### SECTION 209

The Committee heard testimony with respect to H.R. 17661 and H.R. 17758 which would provide for the consideration and determination of all costs and benefits in the evaluation of water resources proj-

ects, including those that may arise from prevention of degradation or enhancement of the environment. Over a year and a half ago, the Water Resources Council embarked upon necessary revisions to the project evaluation criteria with a view toward recognizing all the benefits and costs that result from water resource investments. The Committee understands that the report of the Special Task Force has been completed and is under intensive review within the Executive Branch. The need to improve our environment and to alleviate our urban congestion and problems, requires that more realistic criteria be applied to water resource project evaluations. The proposals under study by the Water Resources Council would provide the basis for the development of projects responsive to the Nation's priorities. These revisions are long overdue and the Committee urges early and expeditious action by the Administration in approving and implementing these procedures. This section expresses the intent of Congress that the objectives of enhancing regional development, protection and improvement of the quality of the environment, enhancing well-being, and enhancing national economic development should be included in water resource projects prosecuted by the Secretary of the Army, acting through the Chief of Engineers, and in the evaluation of benefits and costs attributable thereto.

The environmental objective includes the conservation, preservation, creation or restoration of natural, scenic and cultural resources in order to enhance or maintain the quality of environment. This objective is closely allied to all efforts to conserve natural resources including the preservation or enhancement of aesthetic areas including open and green space, wild rivers, lakes, beaches, shores, mountains and wilderness areas, estuaries, or related areas of unique natural beauty; (2) the protection of areas of archaeological, historical, or scientific value; (3) the protection or improvement of water quality including the prevention of salt water intrusion and control of pollution from all forms of waste, drainage, and heat; and (4) the prevention of erosion and the restoration of eroded areas, with particular emphasis on the treatment of watersheds, mined areas, and critical erosion areas including gully, streambank, roadside, and beach erosion.

Regional development is not to be construed as being coextensive with regional economic development areas under other provisions of law, but would vary with individual projects under study.

#### SECTION 210

This section modifies the project for the improvement of the Mississippi River below Cape Girardeau with respect to the west Kentucky tributaries, authorized as part of the comprehensive plan for the Lower Mississippi Basin in the Flood Control Act of 1965, so as to authorize the Secretary of the Army to relocate all gas transmission lines required to be relocated by this project or at his discretion, to reimburse local interests for relocations made by them. The committee considers that it is equitable in this instance for the United States to assume the cost of such relocations, which were not contemplated at the time the project was authorized.

## SECTION 211

This section would amend section 3013 of title 10 and paragraph (15) of section 5315 of title 5, U.S. Code, to provide for an additional Assistant Secretary of the Army for Civil Works who would have as his principal duty the overall supervision of the Department of the Army's functions relating to programs for the conservation and development of the national water resources including flood control, irrigation, shore protection, and related purposes.

Within the Department of the Army, the responsibility for supervising the Civil Works Program has, for the past several years, been assigned to the General Counsel of the Army who, in this capacity, acts as the Special Assistant for Civil Functions to the Secretary. In January 1966, the Secretary of the Army released a report covering the civil works program of the Corps of Engineers, prepared by the Civil Works Study Board which recommended establishment of an office of an Assistant Secretary of the Army with responsibilities primarily for the civil works missions. This recommendation was based upon the conclusion that the importance of the civil works program to the Nation and the Army warranted a higher degree of personal involvement at the Secretarial level.

The Committee finds that the need for more effective interdepartmental coordination at the Departmental level has increased during the more than four years since the Secretary submitted the Study Board Report. The requirements of Departmental membership on the Water Resources Council, established by the Water Resources Planning Act, and the problems stemming from the increasing involvement in water resources development of the Department of Transportation, the Department of Housing and Urban Development and the Environmental Protection Agency have contributed to the need for an Assistant Secretary who can devote his primary efforts to the civil works mission.

The Civil Works Program exceeds in magnitude the total programs of several existing Federal departments and is extremely important to the nation's water resources. From these standpoints, and others, the Committee believes that there is full justification for proposing an Assistant Secretary to assist the Secretary of the Army in discharging his broad civil works responsibilities.

## SECTION 212

Logjams in the lower Guadalupe River, Texas, obstruct the flow of the water in the channel, resulting in flooding of and damage to adjoining lands. There is also the danger that, in times of severe flooding, the accumulation of logs could break loose and wash downstream, interfering with navigation in the Gulf Intracoastal Waterway. In view of the unique nature of the flood problem here, and the danger presented to the federally maintained waterway, the Committee feels that the removal of the logs is necessary and in the public interest. Local interests are required to furnish necessary lands, easements, and rights-of-way, and to hold and save the United States free from damages due to the work.

## SECTION 213

The town of Niobrara is located on the right bank of the Niobrara River at the confluence with the Missouri River in the upstream reaches of Lewis and Clark Lake. During the planning and design phase of the Gavins Point Dam project, consideration was given to probable adverse conditions which might develop in the vicinity of Niobrara as a result of anticipated aggradation in the upper end of the reservoir. At the time of closure of Gavins Point Dam it was evident that some years would pass before aggradation in the headwaters of the reservoir would create any serious problems with the river levels at Niobrara, especially with the high degree of flood control provided by the upstream dams. It was considered that the town could be protected against extremely adverse conditions, which might occur in the indefinite future. However, it was concluded that such protection could and should be deferred. In hearings before the Senate Appropriations Committee on the Army Civil Functions Appropriations Bill, 1950, the Corps of Engineers reported that provisions will be included in the plans for the Gavins Point Dam project to provide necessary dikes, revetments, and levees in the event they are required. The Corps of Engineers made some preliminary studies of the seepage problem at Niobrara this summer. These studies envisioned relocation of a major portion of the town. On the basis of information available, the Corps has not reached any definite conclusions on the most feasible alternative for solving the problems at Niobrara. This section would authorize the Chief of Engineers to correct the seepage and drainage problem, subject to a determination by the Chief of Engineers with the approval of the Secretary of the Army of the most feasible solution thereto.

## SECTION 214

This section would authorize and direct the Secretary of the Army acting through the Chief of Engineers, to perform dredging operations in the Coal River, Boone County, West Virginia, to provide interim relief from flooding. Local interests are required to furnish the lands, easements and rights-of-way necessary for the operations, and hold and save the United States free from damages due to performance of the work.

A major contributing factor to the flooding along the Coal River is the high rate of sediment produced in upstream areas, much of it resulting from strip mining operations. These sediments build up shoals in the relatively narrow channel and reduce the carrying capacity of the stream. A channel widening project for flood control would not be practicable at this time, because of the siltation problem. For such a project to be effective, an extensive program of land treatment and management to control erosion is necessary.

The Kanawha Basin Comprehensive Study, being undertaken under the direction of a Federal-State Coordinating Committee, will include recommendations concerning land treatment measures and flood control. In the interim, circumstances warrant the undertaking of measures to keep the channel clear of shoals and provide relief from the frequent floods.



## SECTION 215

Section 215 authorizes and directs the Secretary of the Army, acting through the Chief of Engineers, as part of the comprehensive study of the water and related resources of the Susquehanna river basin, to investigate and study, in cooperation with the Administrator of the Environmental Protection Agency and other interested Federal and State agencies, the availability, quality, and use of waters within the basin with a view toward developing a comprehensive plan for the development, conservation, and use of such waters. The studies and investigations authorized by this section will include the development of plans, for recommendation to the Congress, concerning the construction, operation, and maintenance of water conveyance systems; regional waste treatment, interceptor, and holding facilities; water treatment facilities; and facilities and methods for recharging ground water reservoirs.

The Committee feels strongly that truly comprehensive and effective water resources planning must consider all of the water uses and needs of a basin, including means for preserving or enhancing water quality. The Susquehanna basin is considered ideal for the first such study because of the comprehensive study now being undertaken for it by the Department of the Army in cooperation with other Federal and State agencies.

The recently established Environmental Protection Agency will play a significant role in the study. The section provides that any plans submitted to the Congress by the Secretary of the Army, acting through the Chief of Engineers, shall include all recommendations of the Environmental Protection Agency with respect to matters under its jurisdiction.

Plans submitted to the Congress will also include recommendations as to appropriate financial participation and cooperation by the States, political subdivisions thereof, and other local interests.

The intent of the section is to achieve a truly comprehensive study and plan for the water resources of a river basin, utilizing the authorities and abilities available to the various Federal and State agencies in a coordinated and cooperative effort. This study can, through the experience gained in carrying it out, benefit future similar studies in other basins and add greatly to our ability to effectively develop and conserve the Nation's water and related resources.

## SECTION 216

The existing project for the Klamath River Basin, California, authorized by the Flood Control Act of 1966, provides for landside fill of approximately 50 acres behind a freeway under construction by the State of California to provide a flood-free townsite at Klamath, construction of a levee at Klamath Glen, and the management of about 2,200 acres of the remaining flood plain. Since development of the project plan, active erosion has been observed along the north bank of the Klamath River extending about two miles downstream from the authorized project and is endangering existing property and a highway in the immediate vicinity. The necessary bank protection to alleviate this problem is an integral part of the Klamath River flood

control project and should be accomplished during project construction. This section requires the Chief of Engineers to provide bank protection works as an essential part of the authorized project.

## SECTION 217

The Civil Works program of the Corps of Engineers encompasses a large number of reservoirs constructed over a period of many years which are being operated to serve the purposes for which a Federal interest was established at time of their authorization. During the succeeding period the Federal interest in water resources development has been broadened by Acts of Congress, most significantly to serve such additional purposes as municipal and industrial water supply, low flow augmentation, recreation, fish and wildlife conservation and enhancement, and for improvement of the quality of the environment. In consideration of the broadened Federal interest and the large changes in physical and economic conditions that have taken place in the areas influenced by these older projects, it would be in the overall public interest that the plans for these projects be reviewed by the Department of the Army with a view to improving their effectiveness. This section would authorize the Department of the Army to make such reviews when deemed advisable and to submit reports thereon to Congress recommending modifications for authorization. One such study would be to determine on a seasonal basis the feasibility of modifying the maximum and minimum water levels at Keystone Lake, near Cleveland, Oklahoma, in the interest of recreation and conservation.

## SECTION 218

This section is similar to section 109 of this bill and authorizes the Secretary of the Army, acting through the Chief of Engineers, to make surveys in the interest of flood control and related purposes at the following localities:

Great Swamp, New River Basin, South Carolina.

Streams flowing through West Brazoria County Drainage District Numbered 11 in Brazoria County, Texas.

Vermilion River, Ohio.

Huron River, Ohio.

Black River, Lorain County, Ohio.

Black Creek, Clay County, Florida.

Grand Lake, St. Marys, Ohio.

Coody Creek, Muskogee, Oklahoma.

The committee would urge the Secretary of the Army to undertake promptly the heretofore authorized survey for the improvements on Furnace Brook, Hayward Creek and Town Brook, all coastal streams within the City of Quincy and the adjoining towns of Braintree and Milton, Massachusetts.

## SECTION 219

The project for Claremont Dam and Reservoir was authorized in 1938.

In view of the objection by the State of New Hampshire to this project and its long term inactive status, the Committee believes that the existing project should be deauthorized.

#### SECTION 220

Bank erosion is occurring along about 5,200 feet of the Ohio River at Newburgh, Indiana, resulting in the potential undermining of a state highway, a city street, the municipal water supply system, the municipal sewage disposal system, about six private homes, and a few small commercial establishments, as well as land. The cost of the bank revetment works needed to protect the property involved is estimated to be \$1,200,000.

#### SECTION 221

This section provides an increased authorization for the prosecution of the Upper Mississippi River Basin plan for flood control and related purposes under the jurisdiction of the Secretary of the Army and the Chief of Engineers. The River Basin Monetary Authorization and Miscellaneous Civil Works Amendments Act for 1970 (PL 91-282) recently provided an additional \$2,000,000 in monetary authorization for this river basin. It has been reported to the Committee that a recent reanalysis of construction progress and project requirements reveals a projected shortage in monetary authorization in the basin plan through calendar year 1971. The shortage is due to unanticipated cost increases on the Red Rock Dam and Lake Red Rock, Iowa project scheduled for completion in 1971. Additional items of construction work, largely remedial in nature, have been found necessary. Section 221 provides an additional \$1,400,000 to permit appropriations of funds necessary to meet presently scheduled requirements through calendar year 1971 on this project. A description of the basin plan and the current status of the monetary authorization follows:

The Upper Mississippi River Basin is that portion of the north-central United States containing the Mississippi River and all tributary streams above the Ohio River, but excluding the Missouri River. The Mississippi River originates at Lake Itasca in central Minnesota, and flows approximately 1,366 miles to a point above the mouth of the Ohio River. This basin area covers 188,000 square miles and includes the larger parts of Minnesota, Wisconsin, Illinois, and Iowa, and small portions of Indiana, South Dakota, and Missouri.

The Flood Control Act of June 28, 1938, approved the general comprehensive plan for flood control and other purposes in the upper Mississippi River Basin, consisting of reservoirs and local flood protection works on the upper Mississippi and Illinois Rivers, and authorized the appropriation of \$9.3 million for their construction. Subsequent acts have increased the authorization and modified the plan to include additional projects. The monetary authorization provided to date totals \$126.3 million.

*Status of Monetary Authorization*

Total estimated cost of projects in plan-----	\$179, 000, 000
Present monetary authorization-----	126, 300, 000
Appropriations thru June 30, 1970-----	124, 800, 000
Remaining monetary authorization-----	1, 500, 000
Additional scheduled obligations thru Calendar Year 1971-----	2, 900, 000
Deficit monetary authorization thru Calendar Year 1971--	1, 400, 000

NOTE.—The requested authorization is planned for use on the Red Rock Dam and Lake Red Rock, Iowa scheduled for completion in Calendar Year 1971.

## SECTION 222

The Committee feels that there should be a uniformity of obligation in water resources development projects and the associated items of local cooperation, and that before Federal monies are invested in a project, the non-Federal interests should be bound to perform the required cooperation.

Under this section the construction of any water resources project by the Secretary of the Army shall not be commenced until the non-Federal interests enter into a written agreement with the Secretary of the Army to furnish the cooperation required under the project authorization or other law. The requirement for such an agreement also applies where local interests commence work on a Federal project for which they will be reimbursed. It does not apply, however, to those cases where the United States is merely contributing part of the cost of a non-Federal project in recognition of the Federal purposes it will serve, such as flood control.

The non-Federal interests entering into these agreements must be legally constituted public bodies with full authority and capability to perform the terms of the agreement and to pay damages, if necessary, in the event of failure to perform. The agreements will be enforceable in the appropriate district courts of the United States.

The section also provides that after commencement of construction of a project, the Chief of Engineers may undertake performance of those items of cooperation necessary to the functioning of the project, such as operation and maintenance or completion of a partially completed project, if he has first notified the non-Federal interest of its failure to perform the agreement and has given such interest a reasonable time to perform. The purposes of this provision are to protect the Federal investment and to prevent property damage and loss of life which might result from a partially completed or improperly operated or maintained project.

The section also requires that a continuing inventory be kept of agreements and the status of their performance, and that an annual report be made to the Congress.

The Committee feels that this section will provide a necessary uniformity of obligation among non-Federal interests and insure that Federal investments in water resources projects will be economically and judiciously made. The Committee recognizes that changes in State law may be necessary in order for non-Federal interests to comply with this action, and accordingly has made the provisions of the section applicable on January 1, 1972.



## SECTION 223

This section clarifies the authority of the Secretary of the Interior to construct at the Auburn Dam and Reservoir a two-lane river level bridge across the North Fork of the American River with a substructure and deck truss capable of supporting a four-lane bridge.

Although there is ample authority to build this bridge with a substructure to support a two-lane bridge, there is an unquestioned future need for a four-lane crossing to accommodate projected increase in traffic. Among its other uses the enlarged bridge would serve as a primary access to the Auburn-Folsom Federal recreation area which is being developed as part of the Auburn-Folsom Project.

The committee considers it advisable to permit the construction of the bridge with the larger substructure so as to make its future expansion to four lanes more economical.

## SECTION 224

This section is authority for the Secretary of the Army, at his discretion, to make payments in amounts he determines to be equitable to employees of railroads whose tracks and other facilities are required to be relocated as a result of the Libby Dam, Montana, with resultant long term economic injury to these employees through reduction of income. The maximum authorization to carry out this provision is \$900,000.

## SECTION 225

The inhabitants of the Tug Fork Valley have been the victims of chronic and frequent floods that have occurred in this valley and are in urgent need of flood protection. Studies made by the Corps of Engineers at the request of the Appalachian Regional Commission show that the flood problem in the most critical damage centers could be substantially ameliorated through the construction of local flood protection projects at Williamson and Matewan combined with flood-proofing of selected buildings. The accomplishment of this work, at a cost not to exceed \$10,000,000, cannot be initiated until such plans are approved by the Appalachian Regional Commission and the President.

## SECTION 226

This section identifies title II as the Flood Control Act of 1970.

## CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of Rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italics, existing law in which no change is proposed is shown in roman) :

## SECTION 6 OF THE ACT OF JULY 3, 1930

SEC. 6. The Chief of Engineers is authorized to procure the temporary or intermittent services of experts or consultants or organizations thereof in connection with civil functions of the Corps of En-

gineers without regard to the Classification Act as amended: *Provided*, That individuals so engaged [shall not be paid in excess of \$100 per day for their services] *may be paid at rates not to exceed the daily equivalent of the rate for GS-18 for each day of their services.*

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SECTION 110(f) OF THE RIVER AND HARBOR ACT OF 1958

SEC. 110. \* \* \*

\* \* \* \* \*

(f) There is hereby authorized to be appropriated the sum of \$2,000,000 to carry out the provisions of this section *and, upon completion of transfer to the State of Illinois of all right, title, and interest of the United States in and to the canal, an additional sum of \$6,528,000 to be expended for the repair, modification, and maintenance of bridges, title transfer, modification or rehabilitation of hydraulic structures, fencing, clearing auxiliary ditches, and for the repair and modification of other canal property appurtenances, notwithstanding subsection (b) of this section.*

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SECTION 107 OF THE RIVER AND HARBOR ACT OF 1960

SEC. 107. (a) That the Secretary of the Army is hereby authorized to allot from any appropriations hereafter made for rivers and harbors not to exceed [ "\$10,000,000" ] *\$25,000,000* for any one fiscal year for the construction of small river and harbor improvement projects not specifically authorized by Congress which will result in substantial benefits to navigation and which can be operated consistently with appropriate and economic use of the waters of the Nation for other purposes, when in the opinion of the Chief of Engineers such work is advisable, if benefits are in excess of the cost.

(b) Not more than [ "\$500,000" ] *\$1,000,000* shall be allotted for the construction of a project under this section at any single locality and the amount allotted shall be sufficient to complete the Federal participation in the project under this section.

\* \* \* \* \*

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ACT OF AUGUST 13, 1946

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That (a) with the purpose of preventing damage to the shores of the United States, its Territories and possessions and promoting and encouraging the healthful recreation of the people, it is hereby declared to be the policy of the United States, subject to the following provisions of this Act to assist in the construction, but not the maintenance, of works for the restoration and protection against erosion, by waves and currents, of the shores of the United States, its Territories and possessions.

(b) The Federal contribution in the case of any project referred to in subsection (a) shall not exceed one-half of the cost of the proj-

ect, and the remainder shall be paid by the State, municipality, or other political subdivision in which the project is located, except that (1) the costs allocated to the restoration and protection of Federal property shall be borne fully by the Federal Government, [and, further, that] (2) Federal participation in the cost of a project for restoration and protection of State, county, and other publicly owned shore parks and conservation areas may be, in the discretion of the Chief of Engineers, not more than 70 per centum of the total cost exclusive of land costs, when such areas: Include a zone which excludes permanent human habitation; include but are not limited to recreational beaches; satisfy adequate criteria for conservation and development of the natural resources of the environment; extend landward a sufficient distance to include, where appropriate, protective dunes, bluffs, or other natural features which serve to protect the uplands from damage; and provide essentially full park facilities for appropriate public use, all of which shall meet with the approval of the Chief of Engineers, and (3) Federal participation in the cost of a project providing hurricane protection may be, in the discretion of the Secretary of the Army, acting through the Chief of Engineers, not more than 70 per centum of the total cost exclusive of land costs.

\* \* \* \* \*

SEC. 3. The Secretary of the Army is hereby authorized to undertake construction of small shore and beach restoration and protection projects not specifically authorized by Congress, which otherwise comply with section 1 of this Act, when he finds that such work is advisable, and he is further authorized to allot from any appropriations hereafter made for civil works, not to exceed [\$10,000,000] \$25,000,000 for any one fiscal year for the Federal share of the costs of construction of such projects: *Provided*, That not more than [\$500,000] \$1,000,000 shall be allotted for this purpose for any single project and the total amount allotted shall be sufficient to complete the Federal participation in the project under this section including periodic nourishment as provided for under section 1(c) of this Act: *Provided further*, That the provisions of local cooperation specified in section 1 of this Act shall apply; *And provided further*, That the work shall be complete in itself and shall not commit the United States to any additional improvement to insure its successful operation, except for participation in periodic beach nourishment in accordance with section 1(c) of this Act, and as may result from the normal procedure applying to projects authorized after submission of survey reports.

\* \* \* \* \*

#### SECTION 203 OF THE FLOOD CONTROL ACT OF 1966

SEC. 203. The following works of improvement for the benefit of navigation and the control of destructive floodwaters and other purposes are hereby adopted and authorized to be prosecuted under the direction of the Secretary of the Army and the supervision of the Chief of Engineers in accordance with the plans in the respective

reports hereinafter designated and subject to the condition set forth therein. The necessary plans, specifications, and preliminary work may be prosecuted on any project authorized in this title with funds from appropriations hereafter made for flood control so as to be ready for rapid inauguration of a construction program. The projects authorized in this title shall be initiated as expeditiously and prosecuted as vigorously as may be consistent with budgetary requirements. Penstocks and similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam authorized in this Act for construction by the Department of the Army when approved by the Secretary of the Army on the recommendation of the Chief of Engineers and the Federal Power Commission.

\* \* \* \* \*

#### LOWER MISSISSIPPI RIVER BASIN

The project for flood control and improvement of the lower Mississippi River, adopted by the Act of May 15, 1928 (45 Stat. 534) as amended and modified by subsequent Acts of Congress, including the Flood Control Act of 1965. (Public Law 89-298), is hereby further modified and expanded to include the following items:

(1) The project for flood protection in the Teche-Vermillion Basins, Louisiana, substantially in accordance with the recommendations of the Chief of Engineers in House Document Numbered 524, Eighty-ninth Congress, at an estimated cost of \$5,100,000.

(2) Bank revetment for the protection of existing industrial facilities along the river below [Baton Rouge, Louisiana], *Cairo, Illinois*, where, in the discretion of the Chief of Engineers, such bank protection is justified.

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#### SECTION 3013 OF TITLE 10 OF THE UNITED STATES CODE

##### § 3013. Under Secretary of the Army; Assistant Secretaries of the Army

There are an Under Secretary of the Army and [four] *five* Assistant Secretaries of the Army in the Department of the Army. They shall be appointed from civilian life by the President, by and with the advice and consent of the Senate. One of the Assistant Secretaries shall be the Assistant Secretary of the Army for Manpower and Reserve affairs. He shall have as his principal duty the overall supervision of manpower and reserve component affairs of the Department of the Army. *One of the Assistant Secretaries shall be the Assistant Secretary of the Army for Civil Works. He shall have as his principal duty of the overall supervision of the functions of the Department of the Army relating to programs for conservation and development of the national water resources including flood control, navigation, shore protection, and related purposes.*



## SECTION 5315 OF TITLE 5 OF THE UNITED STATES CODE

## § 5315. Positions at Level IV.

Level IV of the Executive Schedule applies to the following positions, for which the annual rate of basic pay is \$38,000:

\*            \*            \*            \*            \*            \*            \*

(15) Assistant Secretaries of the Army [(4)] (5).

\*            \*            \*            \*            \*            \*            \*

## SECTION 204 OF THE FLOOD CONTROL ACT OF 1950

SEC. 204. The following works of improvement for the benefit of navigation and the control of destructive floodwaters and other purposes are hereby adopted and authorized to be prosecuted under the direction of the Secretary of the Army and the supervision of the Chief of Engineers in accordance with the plans in the respective reports hereinafter designated and subject to the conditions set forth therein: *Provided*, That the necessary plans, specifications, and preliminary work may be prosecuted on any project authorized in this title with funds from appropriations heretofore or hereafter made for flood control so as to be ready for rapid inauguration of a construction program: *Provided further*, That the projects authorized herein shall be initiated as expeditiously and prosecuted as vigorously as may be consistent with budgetary requirements: *And provided further*, That penstocks and other similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam authorized in this Act for construction by the Department of the Army when approved by the Secretary of the Army on the recommendation of the Chief of Engineers and the Federal Power Commission:

\*            \*            \*            \*            \*            \*            \*

## COLUMBIA RIVER BASIN

The project for multiple-purposes on the Pend Oreille River at Albeni Falls, Idaho, is hereby authorized substantially in accordance with the recommendations of the Chief of Engineers in Senate Document Numbered 9, Eighty-first Congress, first session, at an estimated cost of \$31,070,000.

The projects for flood control in the Columbia River Basin authorized by the Act of June 22, 1936, are hereby modified, extended, and supplemented substantially in accordance with the report of the Board of Engineers for Rivers and Harbors dated February 21, 1949, subject to the condition that local interests provide without cost to the United States all lands, easements, and rights-of-way; make all necessary highway, highway bridge, and utility alterations; hold and save the United States free from all damages due to the construction works; and maintain and operate the works after completion in accordance with regulations prescribed by the Secretary of the Army; to provide for the following works which are hereby authorized:

(a) Bank protection works along the lower Columbia River at an estimated cost of \$4,900,000; and to provide further for:

(b) The following improvements to existing projects in the lower Columbia River Basin at an estimated cost of \$14,722,000: Sandy drainage district, estimated construction cost \$236,000; Multnomah County drainage district number 1, estimated construction cost \$1,365,000; Peninsula drainage district number 2, estimated construction cost \$1,103,000; Peninsula drainage district number 1, estimated construction cost \$1,437,000; Sauvie Island (areas A and B), estimated construction cost \$900,000; Columbia drainage district number 1, estimated construction cost \$630,000; Bachelor Island, estimated construction cost \$920,000; Scappoose drainage district, estimated construction cost \$459,000; Lewis River area, estimated construction cost \$300,000; Cowlitz diking improvement districts number 5 and number 11, estimated construction cost \$1,100,000; Deer Island drainage district, estimated construction cost \$105,000; Cowlitz County diking improvement districts number 2 and number 13, estimated construction cost \$630,000; Consolidated diking improvement district number 1, estimated construction cost \$1,880,000; Cowlitz County diking improvement district number 15, estimated construction cost \$60,000; Rainier drainage district, estimated construction cost \$576,000; John drainage district, estimated construction cost \$50,000; Beaver drainage district, estimated construction cost \$837,000; Clatskanie drainage district, estimated construction cost \$100,000; Magruder drainage district, estimated construction cost \$30,000; Midland drainage district, estimated construction cost \$130,000; Woodson drainage district, estimated construction cost \$25,000; Puget Island area, Wahiakum diking districts number 1 and number 3, estimated construction cost \$1,269,000; Tenasillahe Island diking district number 6, estimated construction cost \$100,000; Wahkiakum diking district number 4, estimated construction cost \$400,000; Clatsop County diking district number 4, estimated construction cost \$30,000; Clatsop County drainage district number 1, estimated construction cost \$50,000; and to provide further for works in the lower Columbia River Basin at a total estimated cost of \$2,973,000, as follows: Washougal area, Clark County, Washington, approximately five and one-half miles of levee, and other appurtenant works, at an estimated cost of \$820,000 to the United States; Hayden Island, Oregon, approximately four miles of levee, and other appurtenant works at an estimated cost of \$198,000 to the United States; Vancouver Lake area, in the vicinity of Vancouver, Washington, approximately eleven miles of levee and other appurtenant works at an estimated cost of \$1,462,000 to the United States; Kalama River (south area) Cowlitz County, Washington, approximately three miles of levee, and other appurtenant works, at an estimated cost of \$420,000 to the United States; and Clatskanie River area, Oregon, approximately two thousand feet of bulkhead and levee, and other appurtenant works at an estimated cost of \$73,000 to the United States.

In addition to previous authorizations and authorizations herein, the projects listed below for flood control and other purposes in the Columbia River Basin (including the Willamette River Basin) substantially in accordance with the plans recommended in the report of the Chief of Engineers dated June 28, 1949, and approved in the letter dated February 1, 1950, from the Director of the Bureau of the Budget

for construction by the Corps of Engineers, both contained in House Document Numbered 531, Eighty-first Congress, second session, are hereby approved, and there is hereby authorized to be appropriated the sum of \$75,000,000 for the partial accomplishment of those projects and for the continued prosecution of the comprehensive plan for the Willamette River Basin approved in the Act of June 28, 1938, as amended and supplemented by subsequent acts of Congress:

Power facilities at Lookout Point Dam, Middle Fork of the Willamette River Oregon.

Hills Creek Dam, Middle Fork of Willamette River, Oregon.

Dexter reregulating dam, Middle Fork, Willamette River, Oregon.

Waldo Lake Tunnel and regulating works, Middle Fork-North Fork, Willamette River, Oregon.

Fall Creek Dam, Fall Creek, Middle Fork, Willamette River, Oregon.

Holley Dam, Calapooya River, Oregon.

Willamette Falls Fish Ladder, Willamette River, Oregon.

Willamette River channel improvements, bank protection works, and channel clearing and snagging.

Libby Dam, Kootenai River, Montana.

Priest Rapids Dam, Columbia River, Washington.

John Day Dam, Columbia River, Washington and Oregon.

The Dalles Dam, Columbia River, Washington and Oregon.

Local flood protection project at Pendleton, Oregon, and Jackson Hole, Wyoming.

Local flood protection projects in the Columbia River Basin, Montana, Wyoming, Utah, Nevada, Idaho, Oregon, and Washington, provided that with respect to these local flood protection projects the following conditions shall apply:

(1) Not to exceed \$15,000,000 of this authorization shall be available for these local flood protection projects,

(2) All of the local flood protection projects undertaken pursuant to this item shall be economically justified prior to construction,

(3) Local cooperation specified in the Flood Control Act approved June 22, 1936, as amended shall be required.

*The Secretary of the Army, acting through the Chief of Engineers, is authorized to pay to those railroad employees suffering long term economic injury through reduction of income as the result of the relocation of rail transportation facilities due to the construction of Libby Dam, Montana, such sums as he determines equitable to compensate such employees for such injury. There is authorized to be appropriated to carry out this paragraph, not to exceed \$900,000.*







